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Product Training Guide
6th Generation Plasma Media Receivers

PRO-R06U

PDP-R06U

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Pioneer
SERVICE

Contents

Feature Comparison - R05U to R06U……4
Home Gallery Memory Support……..……5
Power On Sequence……6
Power Supply Block……..7
DTV Board Block Diagram……...8
DTV Block Outline……9
Signal Flow (DTV & NTSC Tuners, HDMI & Audio)….10~11
Signal Flow (Analog Video & YC)…….....……...12~13
Signal Flow (PC, PC Card, RGB & Component)……..12~13
Signal Flow (Main, Split & PIP)……...14~15
LED Lighting Patterns……...16
Shut Down Troubleshooting (Blue Flashing LED)……17~18
Trap Switch Location……19
Factory Service Modes……20~36
Disassembly……37~40
Troubleshooting……41~46

Comparison between R05U and R06U regarding change of products function.

Front Panel	Front LED	Changed "Power ON" LED color to blue from green.
	Control key	Addition of control buttons, TV Guide, Enter (Input), Down (Volume Down), Up (Volume Up), Left (Channel Up) and Right (Channel Down).
	Connectors changes	Deletion of audio input connector (mini-plug type) for PC input on front panel. Audio input (RCA connector) on front panel uses both as for Video 4 and for PC
	Memory card (There is detail explanation sheet)	Addition of PCMCIA card slot and Home Gallery function (Only for ELITE)
Rear Panel	Connectors changes	Deletion S video monitor output connector
		Addition to Sub-woofer output connector. Output level is interlocked to panel volume.
		Deletion of RF output connector of ANTENNA B
DTB board	DTB new function	TV-guide, G-LINK
	EPG for HDTV	Changed TV Guide® On-Screen function from PassPort
Specification	EPG for conventional TV	Changed TV Guide® On-Screen function from PassPort
	Screen Size Mode	Addition of following screen size by using HDMI or component input
		HD signal (1080i) --> 4 : 3 / Zoom / Full / Wide (G5 model : Full / Wide)
		HD signal (720p) --> 4:3 / Zoom / Full / Wide (G5 mode: Full / Wide)
	Dual screen	Only this pair is available, one of screen is Tuner source, another is except Tuner, external or so.
	Audio input for both Input 4 and PC	When selecting either function, the same audio is outputted.
	Menu	Available to set automatic change Display size when receiving HDMI and Digital broadcasting and connecting I-Link.
		Available to set automatic change Display size. It changes screen size from 4 : 3 (Normal) to Wide when receiving 4 : 3 signal.

Home Gallery: Memory Support Elite Model Only

▶Supported memory media

–Smart media*
–Memory stick*
–Compact Flash*
–Micro Drive*
–SD*
–xD-Picture card*
–Multi Media Card*
–PC-Card flash memory

▶File format

–FAT12/FAT16/FAT32/VFAT

•FAT: File Allocation Table

▶Up to 2400*1800 pixels supported

–Min 160*120 pixels

–Resolution must be multiple of 8

▶JPEG file format

–DCF compatible

–4:2:2 format

▶Supported file and folder number

–Max 2000 files per folder supported

–Max 500 folder per memory card supported

•Rotation support up to 256 folders

Home Gallery Functionality

▶High resolution 1280*768 display

▶Fast browsing

–Targeting 3seconds to display a 1600*1200 picture

–DCF thumbnail support

▶Easy to use and various function

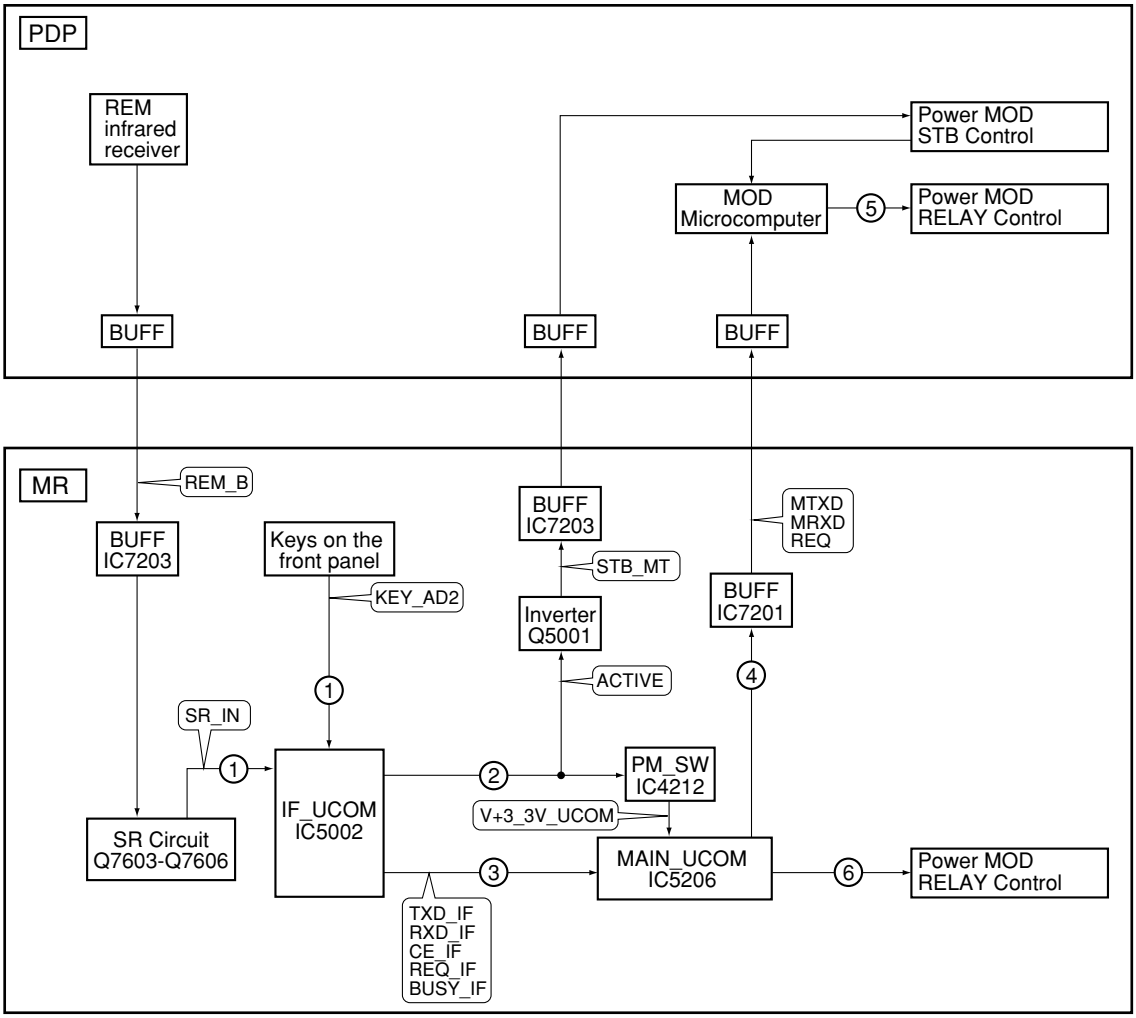
–Thumbnail, Normal view, Full screen display

–Slideshow (Auto and Manual)

–Rotation / Scroll / Zoom IN&OUT

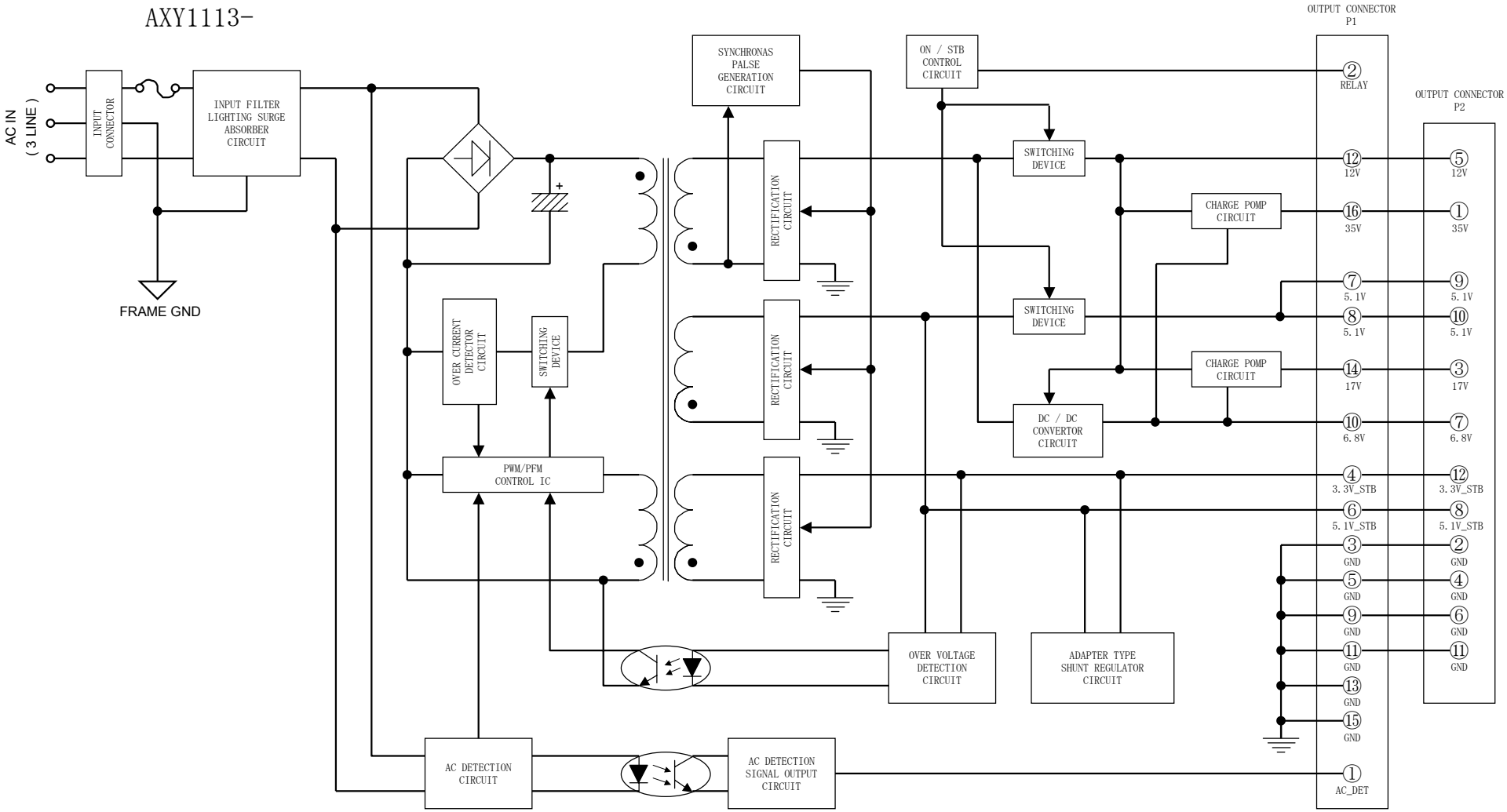
–Operate by remote

POWER ON SEQUENCE

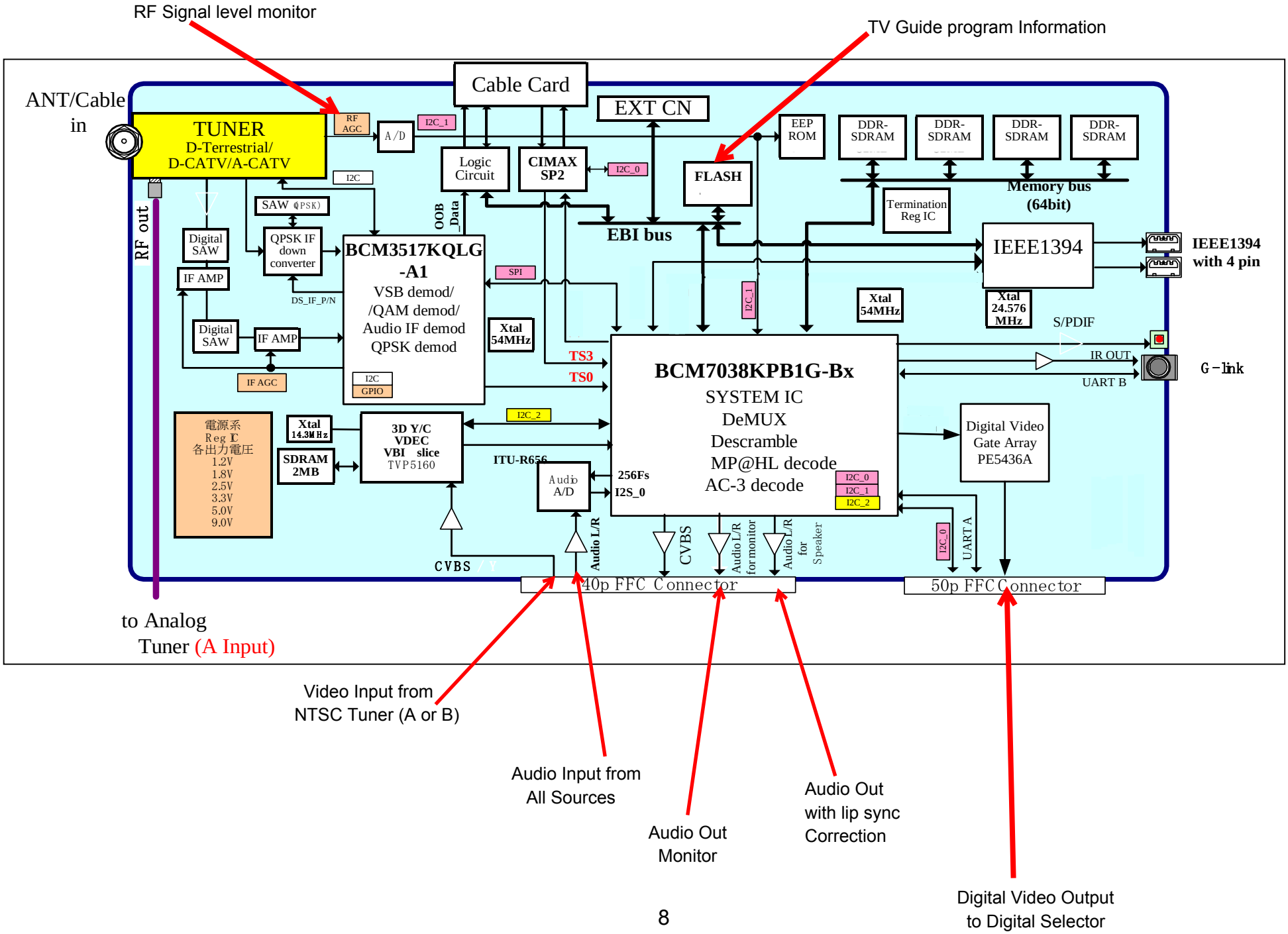


① : The signal from the remote control unit (or a key signal) is input to the IF microcomputer.
② : The IF microcomputer supplies the power to the main microcomputer and MOD microcomputer.
③ : The IF microcomputer transmits operation data from the remote control unit (or keys) to the main microcomputer.
④ : The main microcomputer issues a startup command to the MOD microcomputer.
⑤ : The MOD microcomputer controls the relay of the PDP Power MOD and starts the power-on sequence of the PDP.
⑥ : The main microcomputer controls the relay of the MR Power MOD and starts the power-on sequence of the MR.

POWER SUPPLY UNIT BLOCK DIAGRAM
AXY1113-



DTV Board Block Diagram



Block diagram outline

This assembly, DTB, is composed below circuit blocks. Below is showing outline of each circuit blocks.

DIGITAL FRONT END

This block turns Digital RF signal from connected cable or antenna, and converts it to IF frequency, 44MHz.

In case of cable system, the OOB, Out of Band signal, is passed though and converted by the Down Converter IC in subsequent circuit.

QAM/VSB/QPSK DEMODULATION (BCM3517)

This block demodulates IF signal, 44MHz, from the Tuner, and converts it into a Transport stream, and is send to the BACK END IC.

OOB signal, converted to 50 MHz IF signal, is treated by QPSK modulation, and the data and clock, come from OOB, go to Cable Card (POD) block.

VIDEO DECODE (VDEC)

This block decodes Analog composite video signal, come from Main Board, and treats it as 3D Y/C separation in order to convert 656 Video Format, and sends it to BCM7038. In addition, this block has the function of VBI data slice and sends BCM7038 the data such as EPG data and CC data via I2C.

Audio AD conversion (AD Block)

This block converts Analog audio signal to Digital and sends to BCM7038.

POD I/F

This block adopts PCMCIA slot and it is available to see scrambled TV program by inserting this portion Cable Card, which is assigned by Cable Operator. POD I/F IC contains Card Module I/F and Digital Video Stream I/F, and controls the scrambling with communicating between these I/F and BCM7038. OOB signal sends SI information to Cable Card.

BACK END IC (BCM7038)

This is the system IC which is 1 chip and is created as the application of Cable System and DTV system.

This IC has functions such as HD/SD MPEG Decode, graphic processing, scaling processing, and D/A processing, and controls DDR-SDRAM for System memory.

This IC also has a function to hold the audio data in memory in order to synchronize between audio and video.

IEEE1394

There are 2 I-Link ports, and it is available to connect with Digital AV products, supporting I-Link.

DDR SDRAM

There are 4 DDR SDRAMs, 256Mbit 166MHz, 128Mbyte. These connect to BCM7038 by 64bit data bus.

G-LINK PORT

This port is connected IR controller and controls analog VCR.

Also, This port has serial port which is used by downloading software for only TV-GUIDE..

FLASH,EEPROM

Data storage for application of products. Data capacity is 32Mbyte.

EEPROM has several data for settings, and DTB is operated by their data.

DIGITAL VIDEO OUT

This block converts the format of digitally-processed YCbCr signal which come from BCM7038, and sends it to Main Board.

POWER REGULATOR

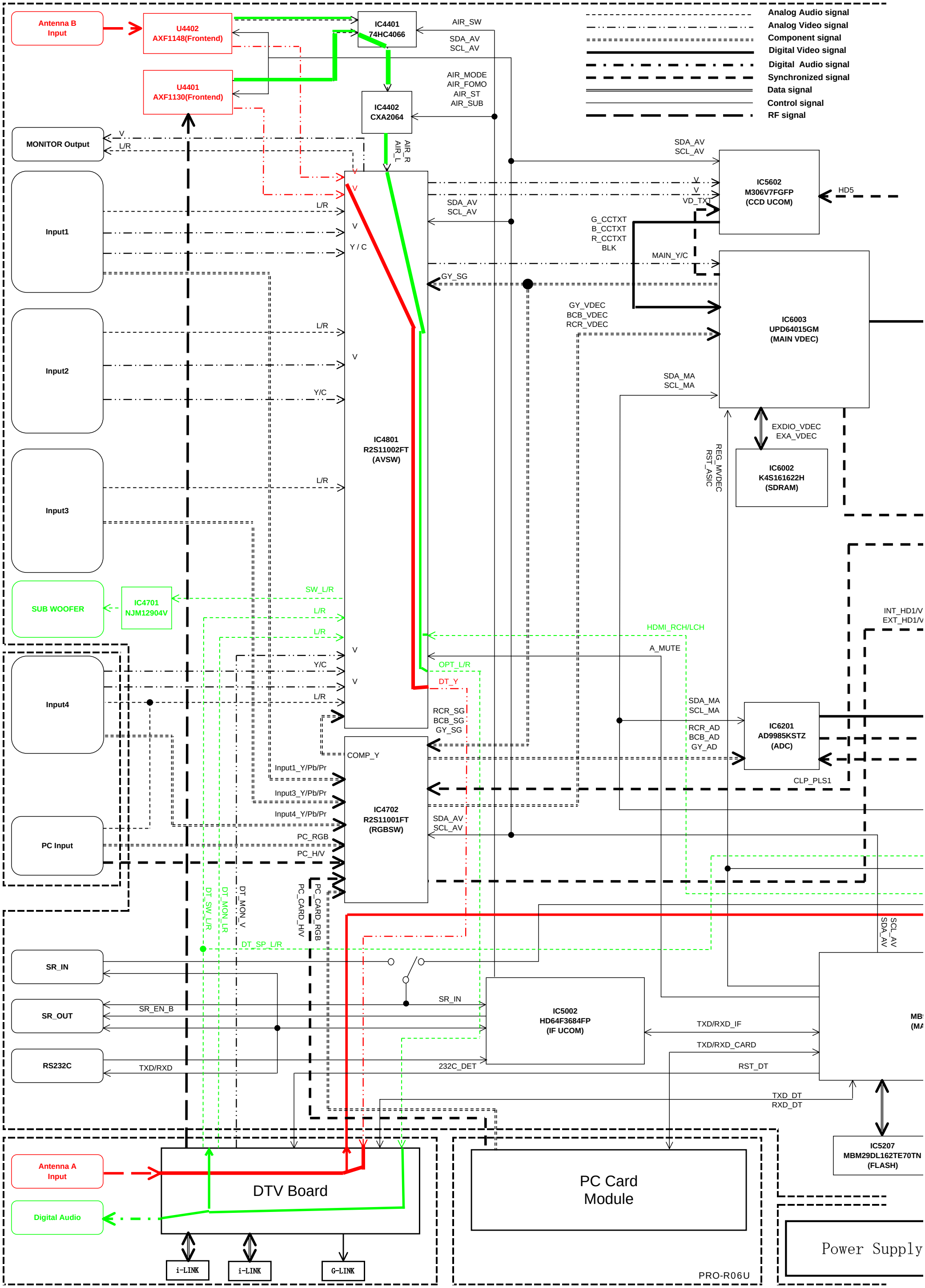
This block generates DC 9V, 5V, 3.3V and 1.8V for analog and digital circuit by using regulator.

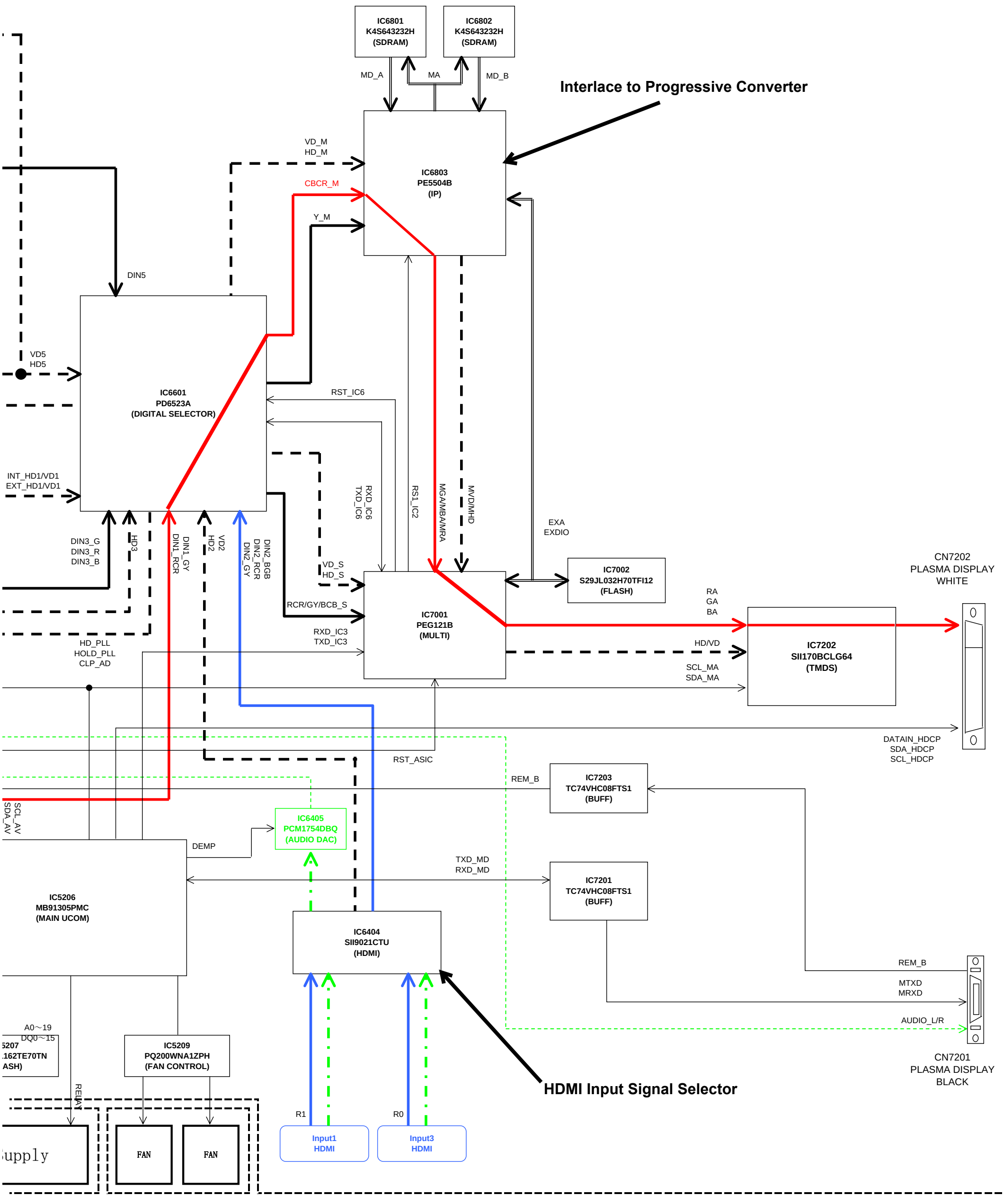
This block also generates DC 3.3V, 1.8V and 1.2V by using DDC and regulator.

TUNER SIGNAL FLOW (DTV & NTSC)

HDMI SIGNAL FLOW

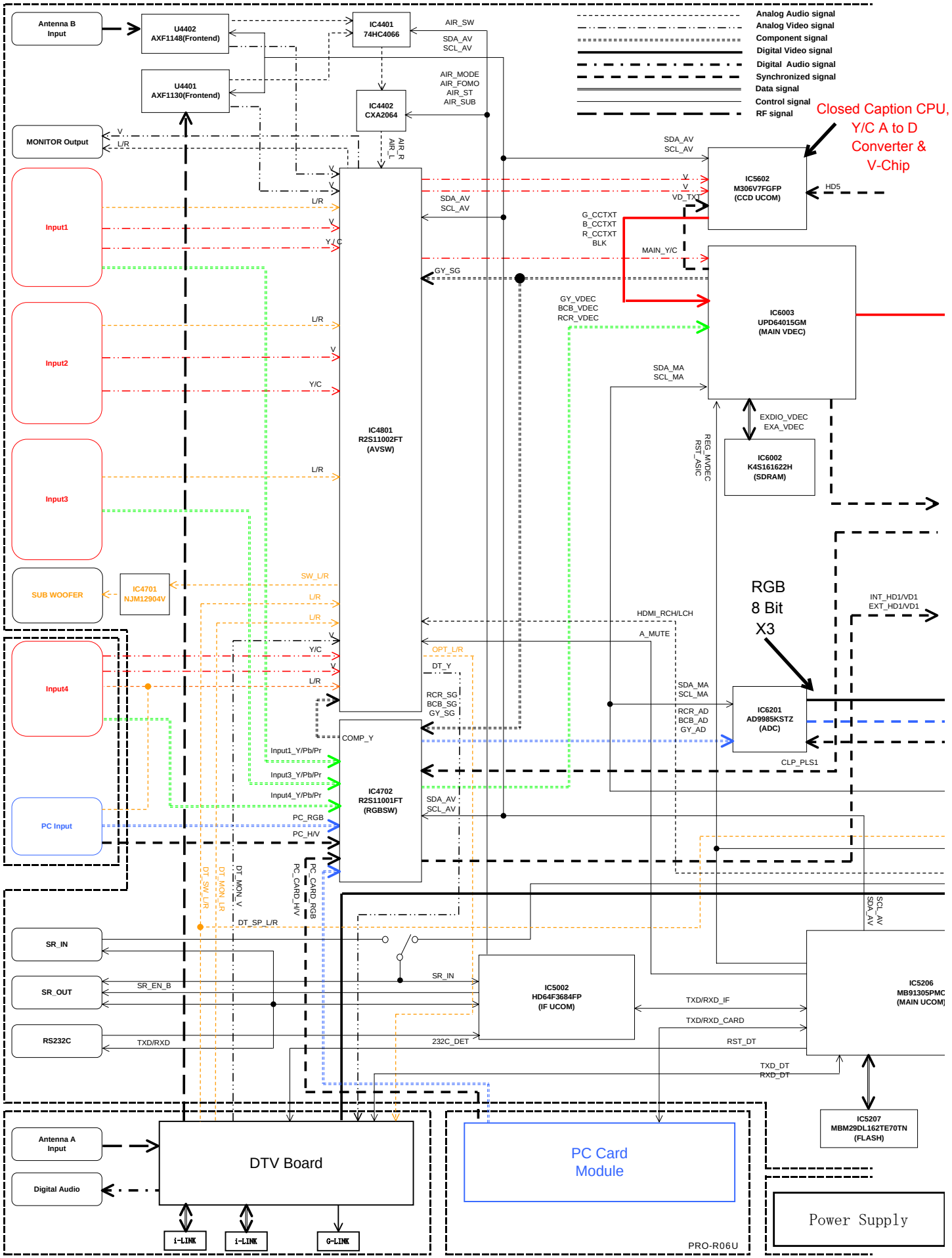
AUDIO SIGNAL FLOW




IC6801
K4S643232H
(SDRAM)
IC6802
K4S643232H
(SDRAM)
MD_A
MA
MD_B
Interlace to Progressive Converter
VD_M
HD_M
IC6803
PE5504B
(IP)
CBCR_M
Y_M
DIN5
VD5
HD5
IC6601
PD6523A
(DIGITAL SELECTOR)
RST_IC6
INT_HD1/VD1
EXT_HD1/VD1
RXD_IC6
TXD_IC6
RS1_IC2
MGA/MBA/MRA
MVD/MHD
EXA
EXDIO
DIN3_G
DIN3_R
DIN3_B
HD3
DIN1_GY
DIN1_RCR
VD2
HD2
DIN2_BGB
DIN2_RCR
DIN2_GY
VD_S
HD_S
IC7002
S29JL032H70TFI12
(FLASH)
CN7202
PLASMA DISPLAY
WHITE
RCR/GY/BCB_S
IC7001
PEG121B
(MULTI)
RA
GA
BA
RXD_IC3
TXD_IC3
HD/VD
IC7202
SII170BCLG64
(TMDS)
HD_PLL
HOLD_PLL
CLP_AD
SCL_MA
SDA_MA
DATAIN_HDCP
SDA_HDCP
SCL_HDCP
RST_ASIC
REM_B
IC7203
TC74VHC08FTS1
(BUFF)
SCL_AV
SDA_AV
IC6405
PCM1754DBQ
(AUDIO DAC)
DEMP
TXD_MD
RXD_MD
IC7201
TC74VHC08FTS1
(BUFF)
IC5206
MB91305PMC
(MAIN UCOM)
IC6404
SII9021CTU
(HDMI)
REM_B
MTXD
MRXD
AUDIO_L/R
CN7201
PLASMA DISPLAY
BLACK
A0～19
DQ0～15
IC5209
PQ200WNA1ZPH
(FAN CONTROL)
HDMI Input Signal Selector
R1
R0
Input1
HDMI
Input3
HDMI
FAN
FAN

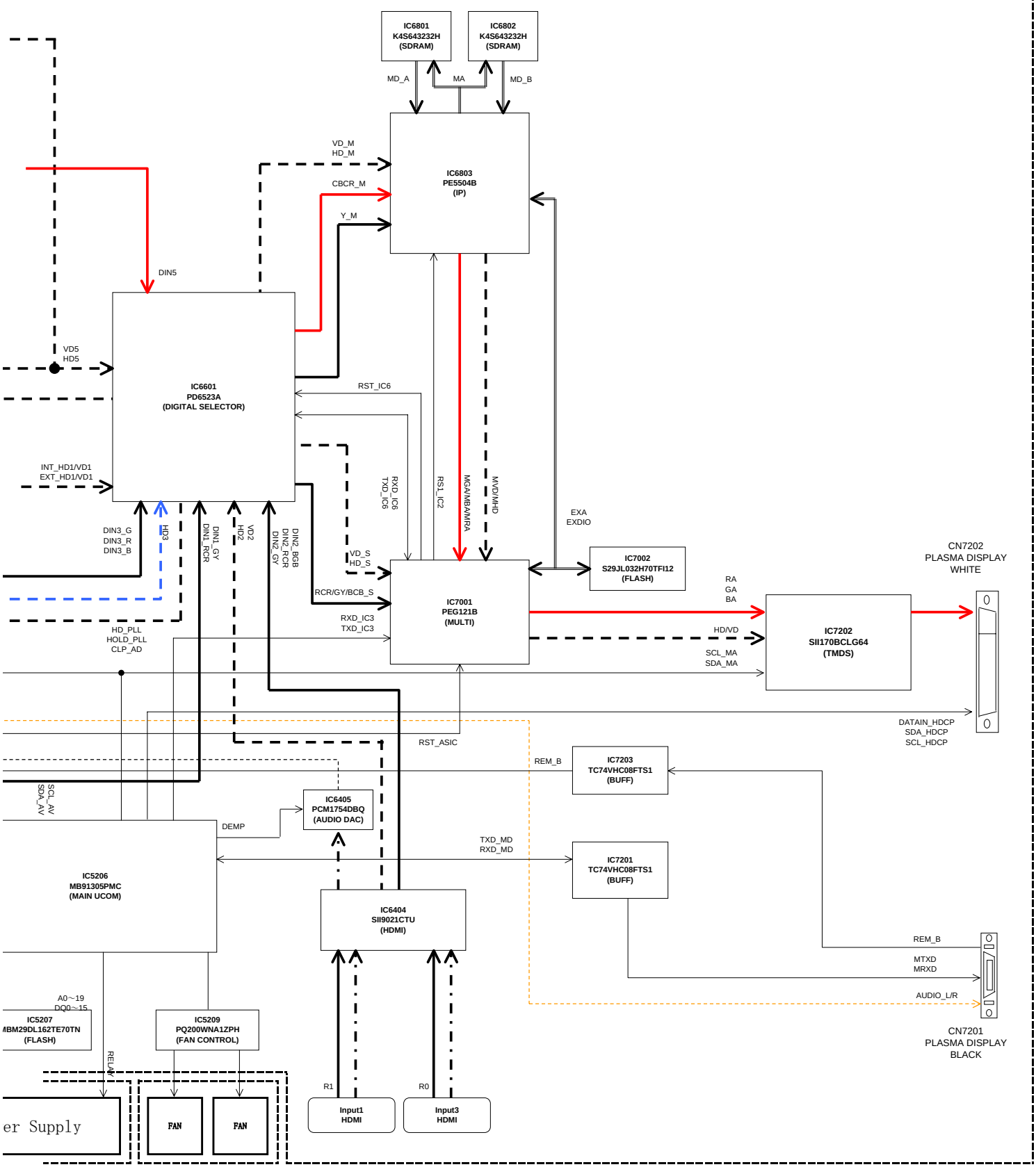
Analog Video & YC Inputs (1,2,4)

PC & PC Card Inputs (RGB)



Component Inputs (1,3,4)

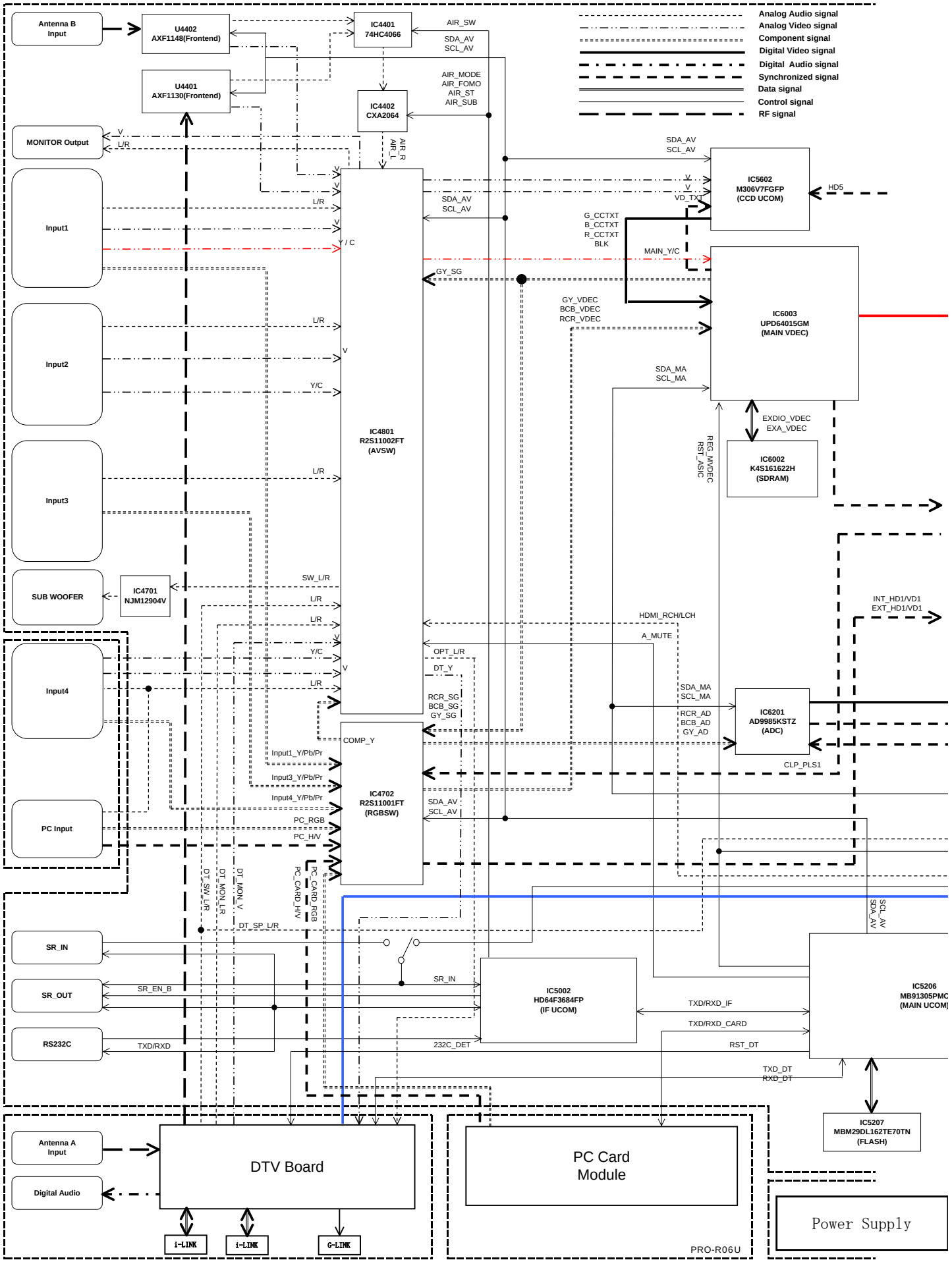
Audio

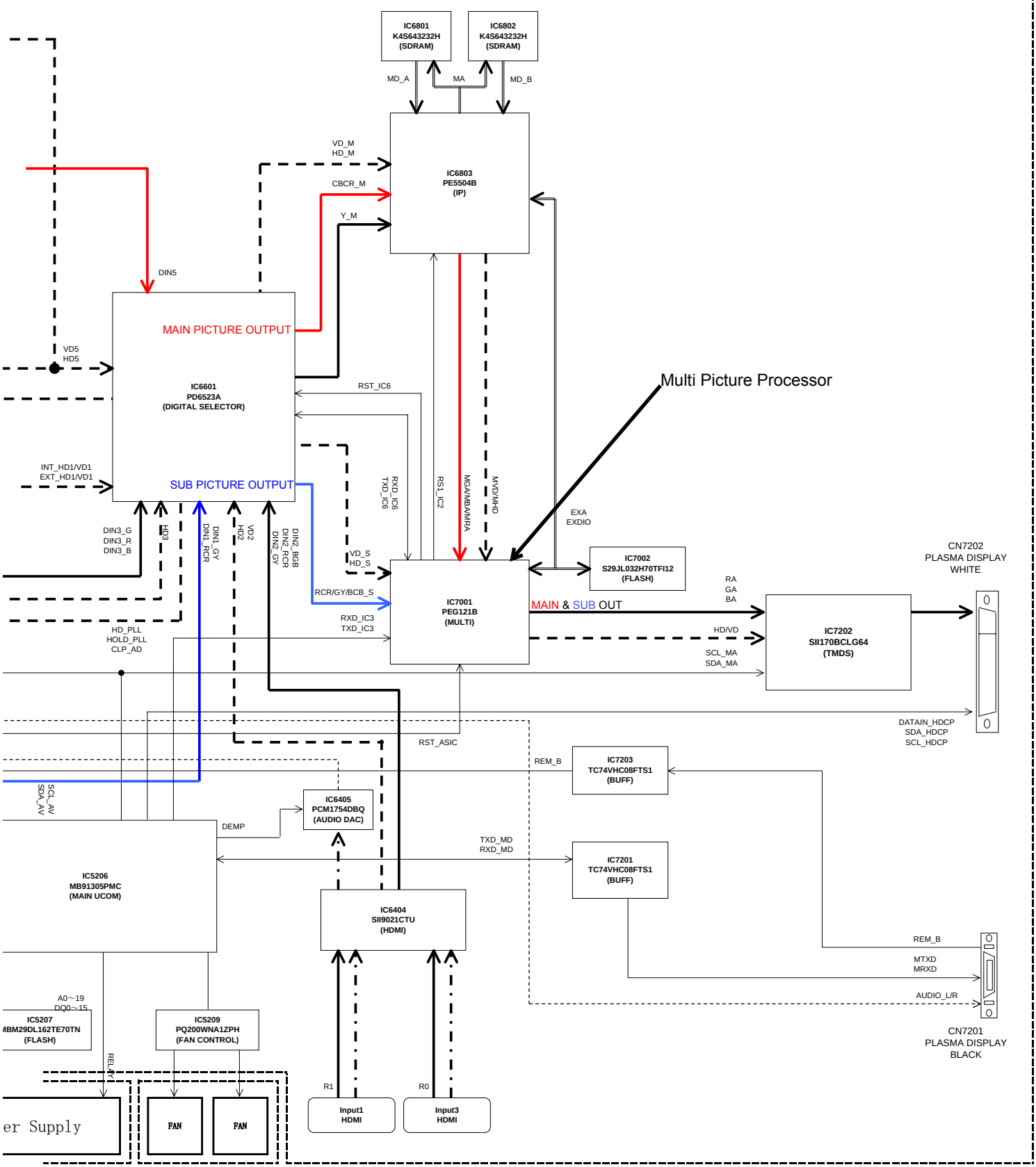


Main / Split / PIP Signal Flow Block

MAIN PICTURE FLOW

SPLIT OR PIP PICTURE FLOW

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EXA
EXDIO
DIN3_G
DIN3_R
DIN3_B
HD3
DIN1_RCR
DIN1_GY
VD2
HD2
DIN2_BGB
DIN2_RCR
DIN2_GY
VD_S
HD_S
IC7002
S29JL032H70TFI12
(FLASH)
RCR/GY/BCB_S
IC7001
PEG121B
(MULTI)
MAIN & SUB OUT
RA
GA
BA
HD/VD
SCL_MA
SDA_MA
IC7202
SII170BCLG64
(TMDS)
CN7202
PLASMA DISPLAY
WHITE
RXD_IC3
TXD_IC3
HD_PLL
HOLD_PLL
CLP_AD
DATAIN_HDCP
SDA_HDCP
SCL_HDCP
RST_ASIC
REM_B
IC7203
TC74VHC08FTS1
(BUFF)
SCL_AV
SDA_AV
IC6405
PCM1754DBQ
(AUDIO DAC)
DEMP
TXD_MD
RXD_MD
IC7201
TC74VHC08FTS1
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IC5206
MB91305PMC
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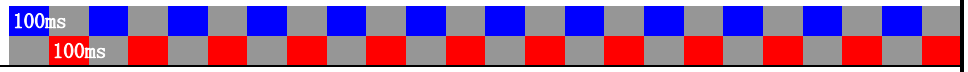
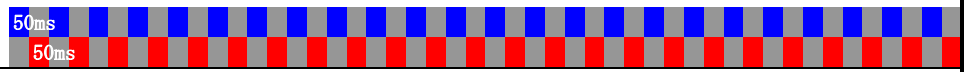
IC6404
SII9021CTU
(HDMI)
REM_B
MTXD
MRXD
AUDIO_L/R
A0～19
DQ0～15
IC5207
MBM29DL162TE70TN
(FLASH)
IC5209
PQ200WNA1ZPH
(FAN CONTROL)
RELAY
CN7201
PLASMA DISPLAY
BLACK
R1
R0
Input1
HDMI
Input3
HDMI
er Supply
FAN
FAN

■ LED-lighting patterns

Status of the Unit		LED-lighting Pattern
Standby, power management	Lit in red	
Power on	Lit in blue	
PDP's power not on	Flashing in red (at 1-sec intervals)	
System cable disconnected *	Flashing alternately in red and blue (at 1-sec intervals)	
Waiting for start of rewriting by the microcomputer		
Waiting for finish of rewriting by the microcomputer		
Shutdown (circuit protection)	Flashing in blue n times (initially at 0.5-sec intervals then 2.5-sec intervals)	
Power-down (circuit protection)	Flashing in red for n times (initially at 0.5-sec intervals then 2.5-sec intervals)	
TRAP switch operation		

* In this case, the red and blue areas on the screen of the panel flash alternately.

■ Defective points assumed from the number of times of LED flashing

No. of times of LED flashing				Category	Site detected as defective	Possible defective points (representative examples)	OSD when detected (warning message)
LEDs on the panel		LEDs on the MR		*1			
RED	Blue	RED	Blue				
	Blue 1	Red		SD	Panel drive IC	*2	None
	Blue 2	Red			Module section IIC	*2	None
	Blue 3	Red			Power decrease of DIGITAL-DC-DC	*2	None
	Blue 4	Red			Panel having abnormally high temperature	*2	Powering off. Internal temperature is too high. Check temperature around PDP. [SD04] *6
	Blue 5	Red			Short-circuiting of the speakers	*2	Internal protection circuit turns power off. Is there a short in speaker cable? [SD05]
Red			Blue 6		Module microcomputer	Disconnection of the system cable Defective module microcomputer or its peripheral circuits of the panel (Refer to the service manual of the PDP-436PU or PDP-506PU.) Defective main microcomputer (IC5206) Failure in communication (TXD_MD, RXD_MD, REQ_MD) between the panel's module microcomputer and IC5206 (main microcomputer)	None
Red			Blue 7		3-wire serial connection of the main section	Defective IC5002 or its peripheral circuits Failure in communication (TXD_IF, RXD_IF, CLK_IF, CE_IF, REQ_IF, BUSY_IF) between IC5002 and IC5206 (main microcomputer) Defective IC7001 or its peripheral circuits Failure in communication (TXD_IC3, RXD_IC3, CLK_IC3, CE_IC3, REQ_IC3, BUSY_IC3) between IC7001 and IC5206 (main microcomputer)	None
Red			Blue 8		IIC of the main section	Defective U4401 (FE1) or its peripheral circuits Defective U4402 (FE2) or its peripheral circuits Defective IC4401 (MPX) or its peripheral circuits *3 Defective IC4801 (AV_SW) or its peripheral circuits Defective IC4702 (RGB_SW) or its peripheral circuits Defective IC5602 (CCD) or its peripheral circuits Defective ICxxxx (GCR) or its peripheral circuits *4 Defective IC6003 (M-VDEC) or its peripheral circuits Defective IC6001 (S-VDEC) or its peripheral circuits *5 Defective IC6201 (ADC) or its peripheral circuits Defective IC6404 (HDMI) or its peripheral circuits Defective IC7202 (PLK-T) or its peripheral circuits Defective ICxxxx (PLK-R) or its peripheral circuits Defective IC5405 (TTX-COM, TTX-BSY) or its peripheral circuits *3 Defective IC5202 (MA-EEP) or its peripheral circuits Failure in communication (SCL_AV, SDA_AV, SCL_MA, SDA_MA, SCL_EP, between one of the above devices and IC5206 main microcomputer)	None
Red			Blue 9		Main microcomputer	Defective IC5206 (main microcomputer) Failure in communication (TXD_IF, RXD_IF, CLK_IF, CE_IF, REQ_IF, BUSY_IF) between IC5206 (main microcomputer) and IC5002	None
Red			Blue 10		Fan	Failure in the fan motor, or the fan stopped because of dust attached to the fan	None
Red			Blue 11		MR or unit having abnormally high temperature	The Media Receiver or the unit being used at high temperature	Powering off. Internal temperature is too high. Check temperature around media receiver. [SD11]
Red			Blue 12		Digital tuner	Defective DTV tuner Failure in communication (TXD_DT, RXD_DT) between the digital tuner and IC5206 (main microcomputer)	None
Red			Blue 13		ASIC power supply (DC-DC)	Defective U4201 (DD_CON) or short-circuiting elsewhere *6	None

*1: Shutdown (SD) is a protective operation controlled by the microcomputer, and you can turn on the unit again using the remote control unit.
Power-down (PD) is a protective operation activated by the circuitry and can be reset after AC power is off for about 1 minute.

*2: Refer to the service manual of the PDP-436PU or PDP-506PU.

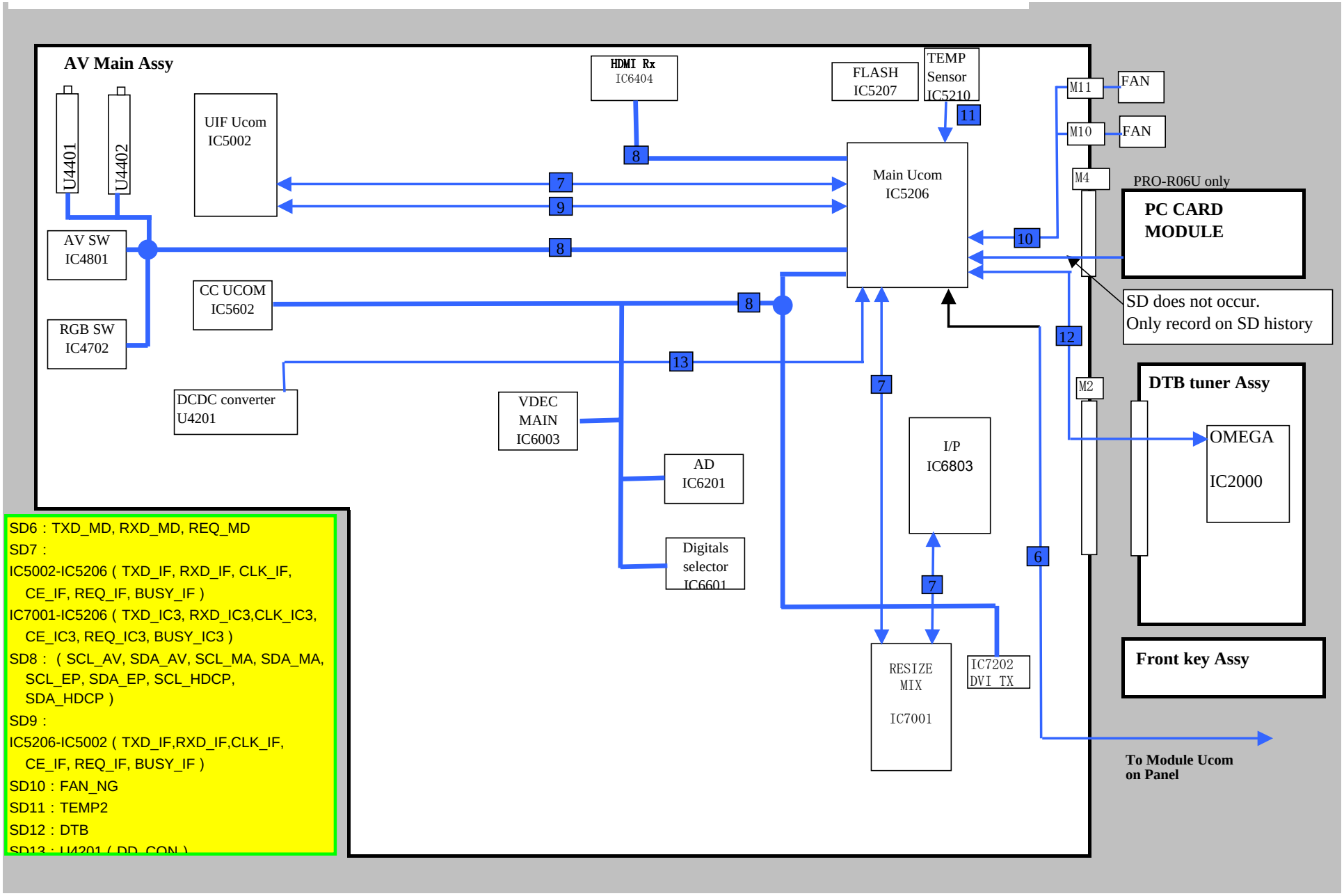
*3: Only for EU and IRD model,

*4: Only for J model,

*5: Except for US model.

*6 Only for one-body model,

SD Shut Down Block Diagram

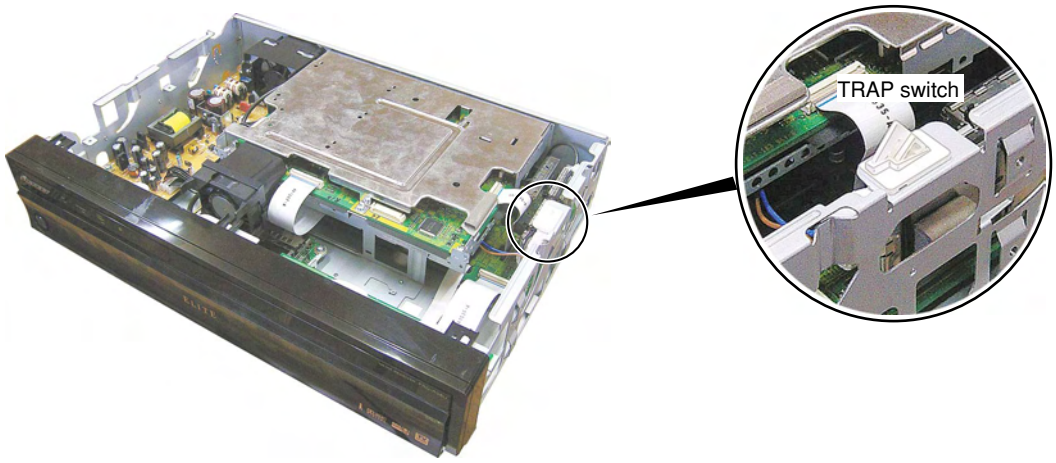


Trap Switch Location (Media Receiver)

● Outline and Notes

For video data transmission from the Media Receiver to the PDP-436U and PDP-506U-series Plasma Displays, digital signals are used. Therefore, this unit adopts the HDCP (High-bandwidth Digital Content Protection) system for copyright protection. This unit is also provided with a detection switch (TRAP switch) that will prohibit the unit from being turned on again "if the upper plate of the unit is accidentally opened," in order to prevent the panel technology from being leaked out.

The TRAP switch is disabled while the unit is turned off.
When performing internal diagnosis of the PDP, fix the switch to the OFF position using adhesive tape before turning on the unit. After servicing, be sure to remove the adhesive tape.



To Release an Activated Trap Switch:
1. Enter Factory Service mode
2. Select initialize mode
3. Hold down Display Key on Remote for 5 seconds.

SERVICE FACTORY MODE

To operate in Service Factory mode, use the supplied remote control unit.

How to enter Service Factory Mode

Press: DISPLAY (Wait 3 Sec), Press LEFT, UP, LEFT, RIGHT, POWER (Within 10 Sec).

Operation in Service Factory mode

● Functions whose settings are set to OFF

The settings for the following functions are set to OFF when Service Factory mode is entered (including when the "FAY" command is received):

- Two-screen operations (input function set on the main side is selected)
- P ZOOM
- FREEZE
- Detection of the TRAP switch (The log in the EEPROM is retained.) (KUC type only)

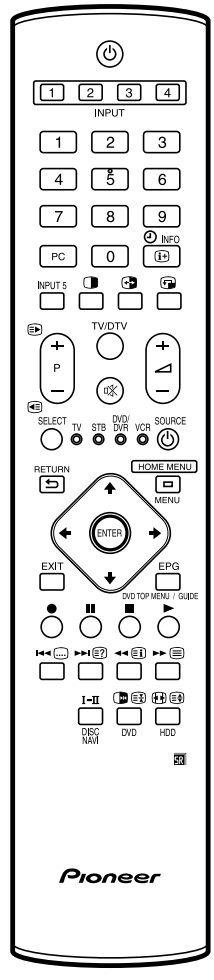
● User data

User data will be treated as follows:

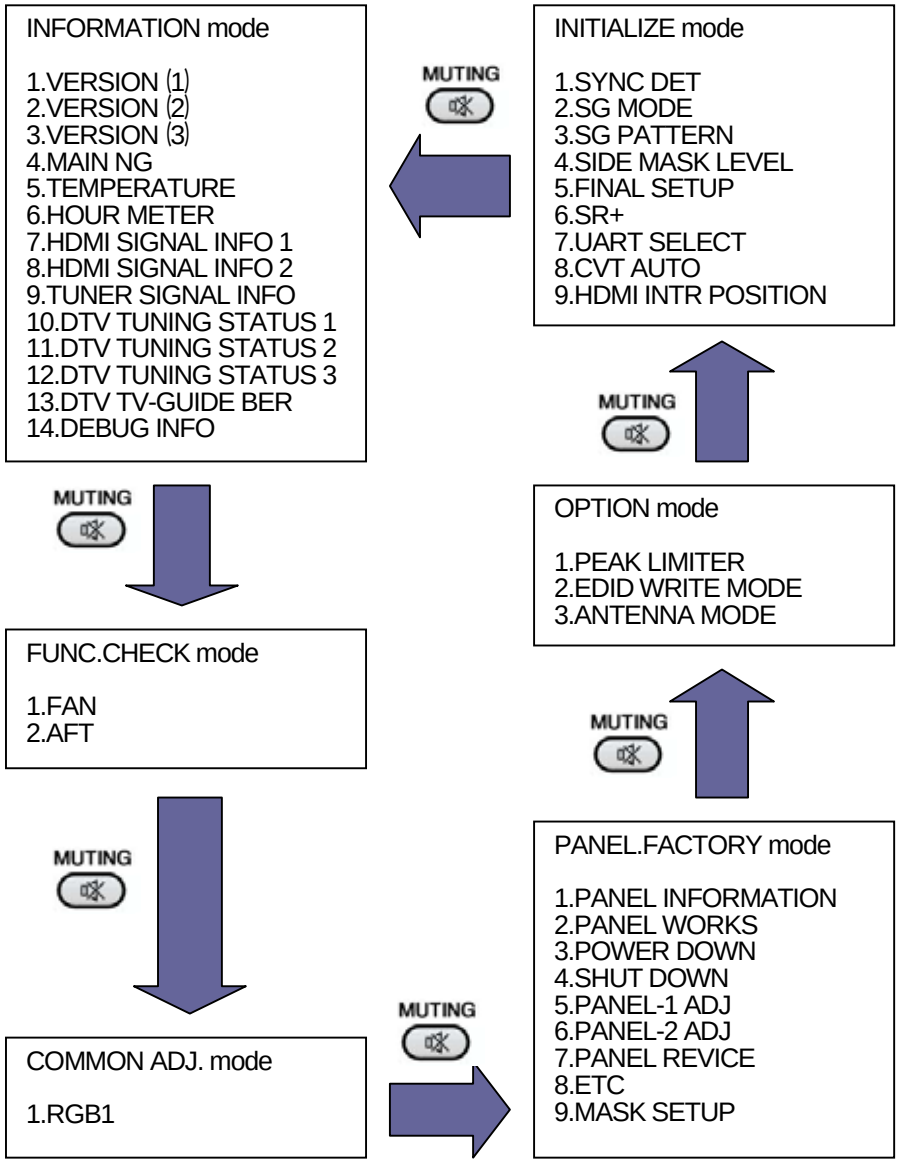
- User data on picture- and audio-quality adjustments are not reflected, and factory-preset data are output (user data will be retained in memory). When the unit enters Factory mode, the current audio-quality adjustment data will still be retained in memory.
- As to data on various settings, user data will be applied to the items that are associated with signal format change (screen size switching, etc.).
- Data on screen (i.e., screen position; meaning clock dividers, and not including data on screen size) are reset to the default values (data stored in memory will be retained). Screen size will be retained.

Remote control codes in Service Factory mode

SR Function	Main Function	Remarks
Muting	Switching the main items	Shifting to the next main item (top)
DOWN	Switching the subtitled items	Shifting downward to the next subtitled item
UP	Switching the subtitled items	Shifting upward to the next upper layer
LEFT	Increasing the adjustment value	Increasing the adjustment value
RIGHT	Decreasing the adjustment value	Decreasing the adjustment value
SET	Switching layers	Shifting downward or upward to the next lower or upper layer
INPUT	Selecting input	Shifting the input to the next function
INPUTxx	Selecting input	Switching the input to xx
CH+	Increasing the channel number	Advancing a preset channel (effective when Function is set to TV)
CH-	Decreasing the channel number	Turning a preset channel backward (effective when Function is set to TV)
Numeric keys	Function: TV	Function: TV (previously selected channel number is selected)
POWER	Power OFF	Turning the power off
FACTORY	Factory OFF	Turning Service Factory mode off
MENU	Menu ON	Turning Service Factory mode off and Menu mode on



Changes of Service Factory Menu



DETAILS OF PANEL FACTORY MODE、REFER TO PANEL'S SERVICE MANUAL.

Indications in Service Factory Mode

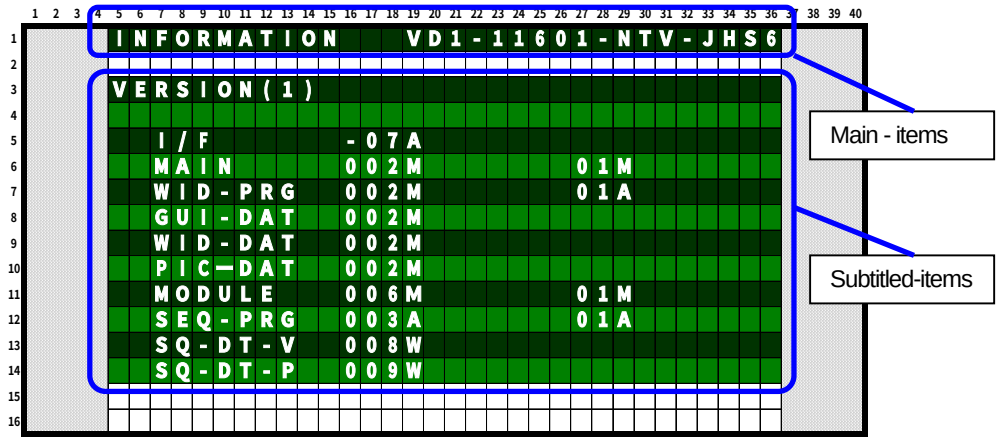
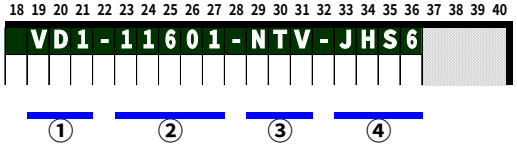


Figure 1.3.1.1. GUI Example

Main-item indications



①	Input function
②	SIG mode and Screen size
③	Color system and Signal type
④	Option

1.

Input function	
Input function	OSD
VIDEO1~4	VD1~4
Terrestrial Wave A	ARA
Terrestrial Wave B	ARB
Cable A	CBA
Cable B	CBB
PC	PC
PC Card	PCC

2.

SIG mode and Screen size
Note: See SIG-Mode Tables. (See next page.)

3.

Color system and Signal type		
Color system and signal type		OSD
NTSC	Composite input	NTV
	S-connector input	NTS
Y/CB/CR		CBR
Y/PB/PR		PBR
RGB		RGB
Digital video signal		DIG

4.

Option (Destination, Panel Generation, etc)	
Options	OSD
HD system in North America (Regular)	ATS6
HD system in North America (ELITE)	AHS6

②SIG Mode and Screen Size (by User is displayed)

1-2nd Character: SIG-Mode (resolution)

3-4th Character: SIG-Mode (refresh rate)

5th Character: Setting of the screen size that user configured

●SIG-Mode table for video signals (resolutions and V frequencies)

1-4th Character		Signal Type	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
10	60	SDTV*525i	60.000	15.750
20	60	SDTV*525p	60.000	31.500
30	60	HDTV*1080i	60.000	33.750
40	60	HDTV*720p	60.000	45.000

●SIG-Mode table for PC signals (resolutions and V frequencies)

1-4th Character		Signal Type	Vertical Frequency Fv (Hz)	Horizontal Frequency Fh (kHz)
C1	70	720x400	70.087	31.469
C2	60	640x480	59.940	31.469
	72		72.809	37.861
	75		75.000	37.500
C4	56	800x600	56.250	35.1556
	60		60.317	37.879
	72		72.188	48.077
	75		75.000	46.875
C5	75	832x624	74.550	49.725
C6	60	1280x720	60.000	74.250
C7	60	1024x768	60.004	48.363
	70		70.069	56.476
	75		75.029	60.023
C8	56	1280x768	56.250	45.113
	60		59.833	47.986
	70		70.000	56.137

●Selection of the screen size by the user is displayed.

5th Character	GUI Notation	VIDEO	PC	Remark
0	DOT BY DOT	×	●	
1	4:3	●	●	
2	FULL (FULL1)	●	●	
3	ZOOM	●	×	
4	CINEMA	●	×	
5	WIDE	●	×	
8	FULL2	●	●	

●：supported、×：unsupported

2. Service Factory Menu

2.1. INFORMATION mode

●Operation items

No.	Function/Display	Context	RS232C
1	VERSION (1)	The flash memory versions for each device are displayed. (common part)	QS1
2	VERSION (2)	The flash memory versions for each device are displayed. (individual part)	QS6
3	VERSION (3)		
4	MAIN NG	The shutdown generated on Media Receiver side and its time of occurrence are displayed.	QNG
5	TEMPERATURE	The information of temperature and fan status on Media Receiver side is displayed.	QMT
6	HOUR METER	The Cumulative power-on time to the Media Receiver is displayed.	—
7	HDMI SIGNAL INFO 1	The file information of HDMI series are displayed.	—
8	HDMI SIGNAL INFO 2		
9	TUNER SIGNAL INFO	The signal information on TUNER is displayed.	—
10	DTV TUNING STATUS 1	Digital broadcast information and status is displayed upon receiving digital broadcast signal.	—
11	DTV TUNING STATUS 2		
12	DTV TUNING STATUS 3		
13	DTV TV-GUIDE BER	TV-Guide Bit Error Rate Information	—
14	DEBUG INFO	Debug Information.	—

1. VERSION (1)

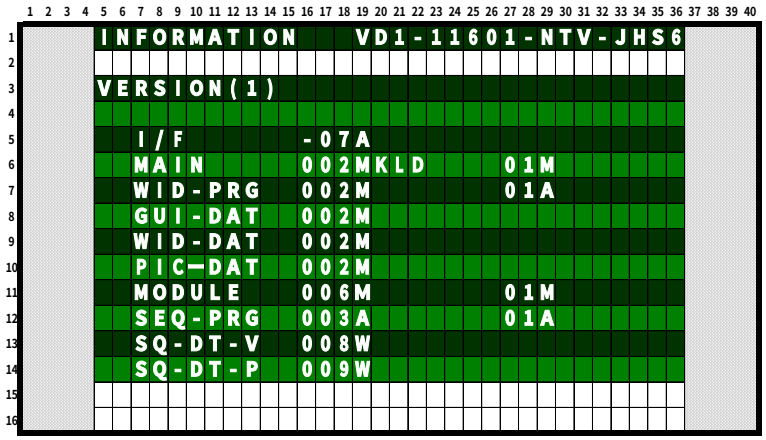


Figure 1.3.1.1. VERSION (1)

Flash memory on Device.	OSD
IF microcomputer	I/F
Main microcomputer	MAIN
Program for IC3	WID-PRG
GUI data for IC3	GUI-DAT
Enhanced data for IC3.	WID-DAT
Picture Quality data for IC3	PIC-DAT
Module microcomputer (for the PDP)	MODULE
Program for IC4 (for the PDP)	SEQ-PRG
Sequence data for IC4 Video	SQ-DT-V
Sequence data for IC4 PC	SQ-DT-P

1.3. Indications in Service Factory Mode

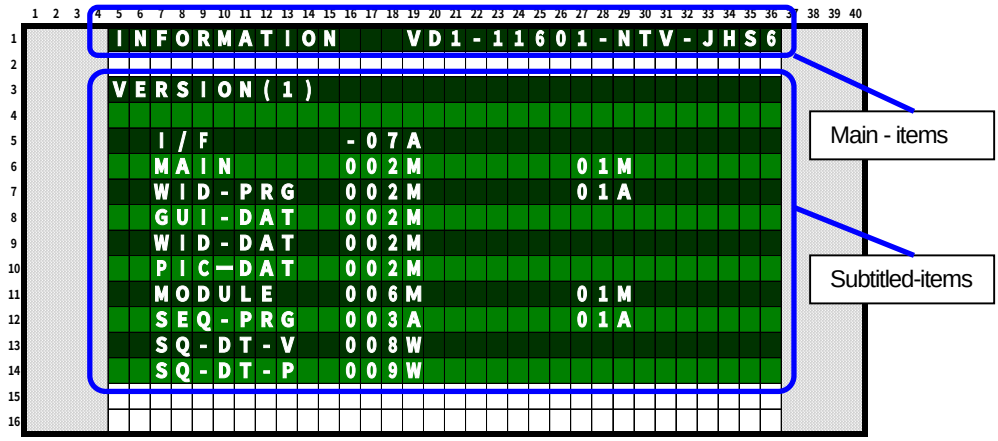
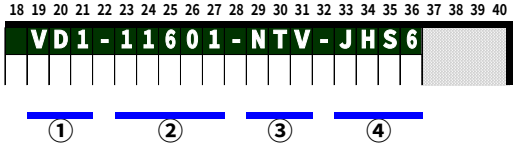


Figure 1.3.1.1. GUI Example

1.3.1. Main-item indications



①	Input function
②	SIG mode and Screen size
③	Color system and Signal type
④	Option

Input function	
Input function	OSD
VIDEO1~4	VD1~4
Terrestrial Wave A	ARA
Terrestrial Wave B	ARB
Cable A	CBA
Cable B	CBB
PC	PC
PC Card	PCC

SIG mode and Screen size
Note: See SIG-Mode Tables. (See next page.)

Color system and Signal type		
Color system and signal type		OSD
NTSC	Composite input	NTV
	S-connector input	NTS
Y/CB/CR		CBR
Y/PB/PR		PBR
RGB		RGB
Digital video signal		DIG

Option (Destination, Panel Generation, etc)	
Options	OSD
HD system in North America (Regular)	ATS6
HD system in North America (ELITE)	AHS6

4. MAIN NG

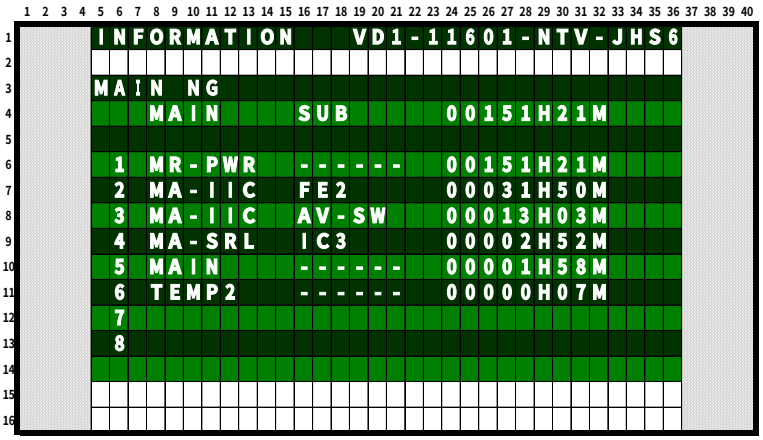


Figure. MAIN NG

OSD:MAIN	OSD:SUB	Cause of shutdown
MODULE	----	Failure of communication to Module microcomputer
MA-SRL		3-wire Serial Communication of Main microcomputer.
	IF	- Communication failure of IF microcomputer
	MULTI1	- MANTA communication failure (MULIT1)
	I/P	- MANTA communication failure (I/P)
	D-SEL	- MANTA communication failure (D-SEL)
MA-IIC		IIC Communication failure of Main microcomputer
	FE1	- Analog Tuner 1 (Front End 1)
	FE2	- Analog Tuner 2 (Front End 2)
	MPX	- MPX
	AV-SW	- AV Switch
	RGB-SW	- RGB Switch
	CCD	- CCD
	GCR	- GCR
	M-VDEC	- Main VDEC
	ADC	- AD/PLL
	HDMI	- HDMI
	PLK-T	- TMDS Tx
	PLK-R	- TMDS Rx
	MA-EEP	- 64k EEPROM
MAIN		Communication failure of Main microcomputer &Unknown Error
FAN		Fan stopped
TEMP2		Abnormally high temperature at MR.
DTUNER		Failure of Digital Tuner
	PS/RST	- Failure to DTB Starting
	DEVICE	- DTB Device Error
	TV-G	- TV-Guide Error
M-DCDC		Abnormally in RST2 of MR (power decrease of DC-DC converter)
HOME-G		Failure at Home Gallary
	CD-COM	- Failure of PC Card Communication
	CD-DEV	- Failure of PC Card
	CD-RST	- PC Card Reset NG

5. TEMPERATURE

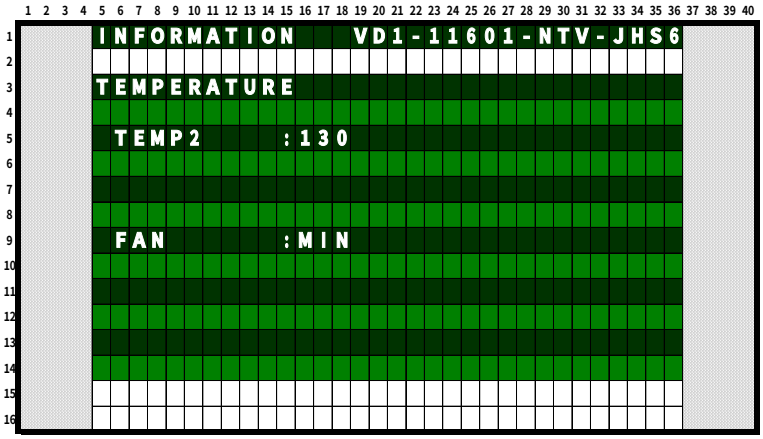


Figure. TEMPERATURE

Displays the temperature and FAN speed of the Media Receiver.

TEMP2: Displays the value from 000 to 255 of the readout data from the Media Receiver's built-in heat sensor.

FAN: The value of the Fan output is displayed.
Either STOP, MIN, MAX is displayed
STOP: Fan stop, MIN: Fan Speed Low, MAX: Fan Speed High

6. HOUR METER

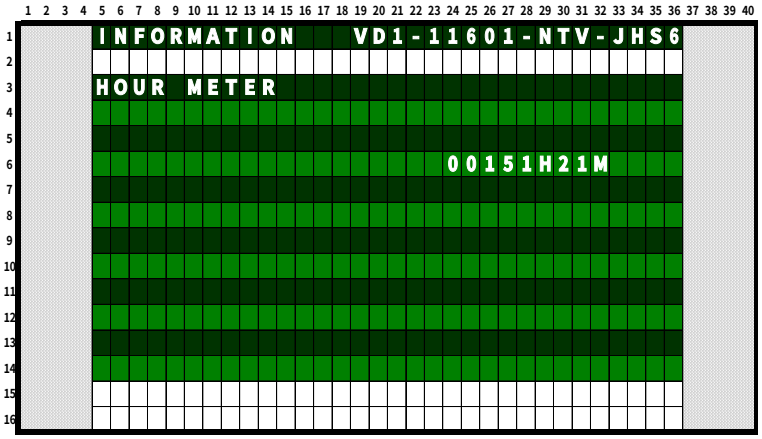


Figure. HOUR METER

- Displays the total time of power that the Media Receiver has been turned ON.
- Main microcomputer's memory timing is every one hour while the power is turned ON, when power is turned OFF, when PD/SD occurs.

7, 8. HDMI SIGNAL INFO

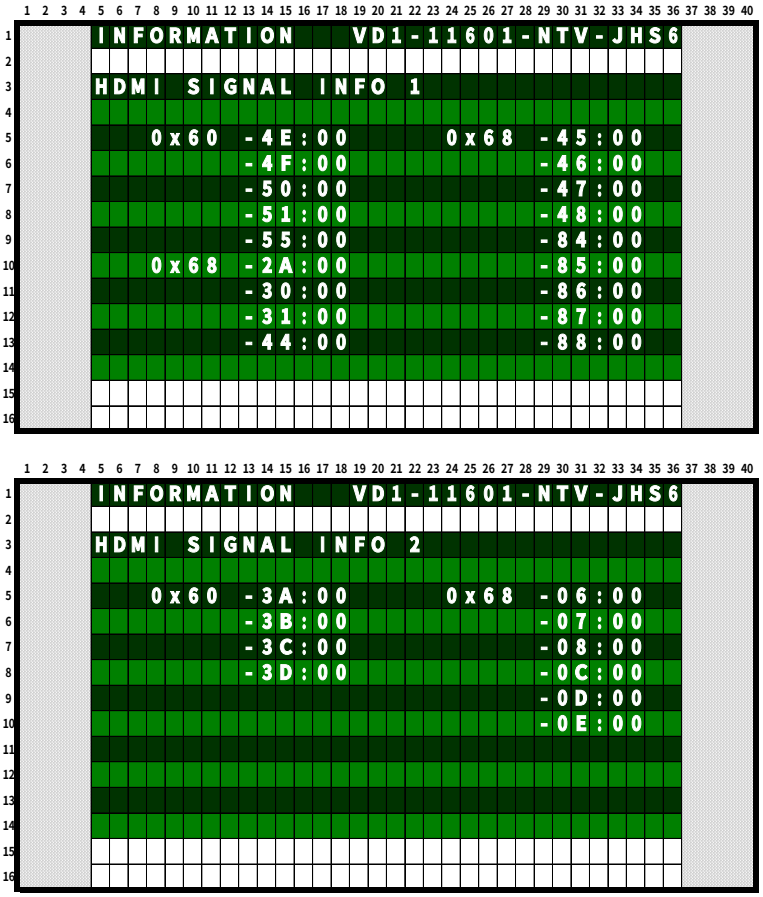


Figure. HDMI SIGNAL INFO 1,2

Displays the input signal information of HDMI terminal.

HDMI SIGNAL INFO 1		
SA		Context
0x60	- 4E:	Video information: valid horizontal pixel numbers (low order bit)
	- 4F:	Video information: valid horizontal pixel numbers (high order bit)
	- 50:	Video information: valid vertical line numbers (low order bit)
	- 51:	Video information: valid vertical line numbers (high order bit)
	- 55:	Video information: interlace/non-interlace, sink polarity
0x68	- 2A:	Audio information: PCM/non PCM, copyright protected or not
	- 30:	Audio information: sampling frequency
	- 31:	Audio information: sampling bit rate
	- 44:	Audio information: color space
	- 45:	Video information: aspect ratio
	- 46:	Video information: scaling
	- 47:	Video information: video format
	- 48:	Video information: pixel count
	- 84:	Audio information: channel count
	- 85:	Audio information: not used (zero at all times)
	- 86:	Audio infromation: not used (zero at all times)
	- 87:	Audio information: speaker allocation
	- 88:	Audio information (down mix prohibit flag)

HDMI SIGNAL INFO 2		
SA		Context
0x60	- 3A:	Video information: valid horizontal pixel numbers (low order bit)
	- 3B:	Video information: valid horizontal pixel numbers (high order bit)
	- 3C:	Video information: valid vertical line numbers (low order bit)
	- 3D:	Video information: valid vertical line numbers (high order bit)
0x68	- 06:	Audio information: information for audio clock playback
	- 07:	
	- 08:	
	- 0C:	
	- 0D:	
	- 0E:	

9. TUNER SIGNAL INFO

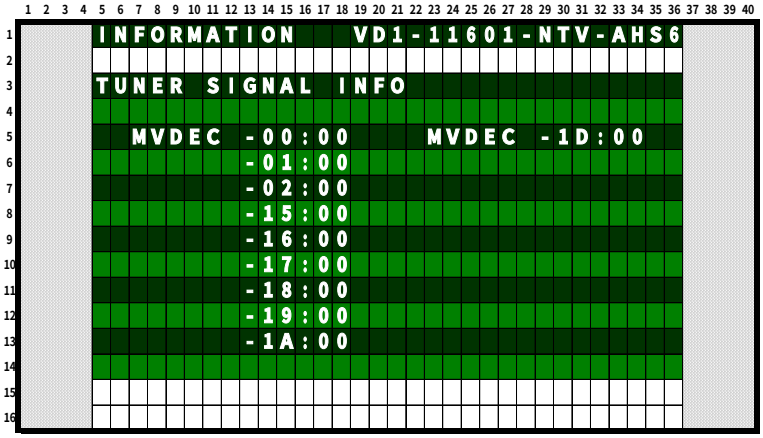
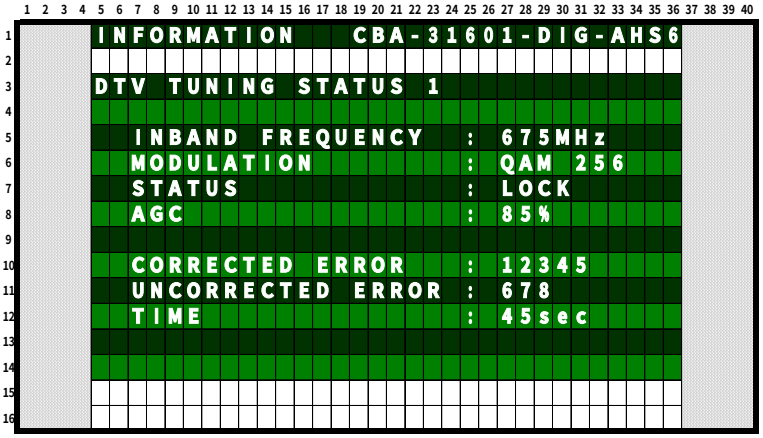


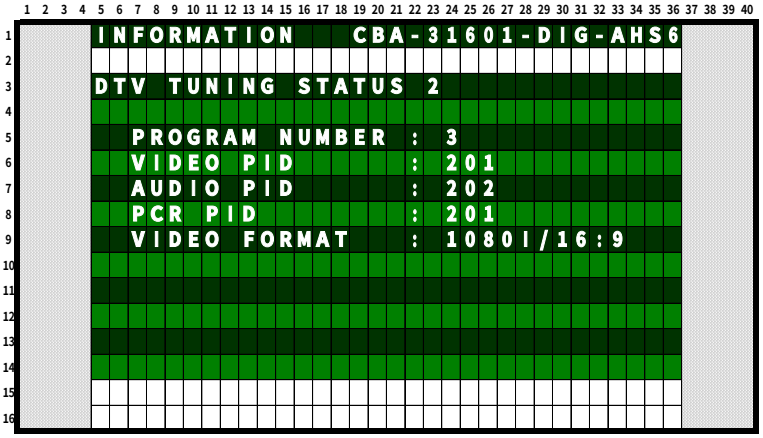
Figure. TUNER SIGNAL INFO

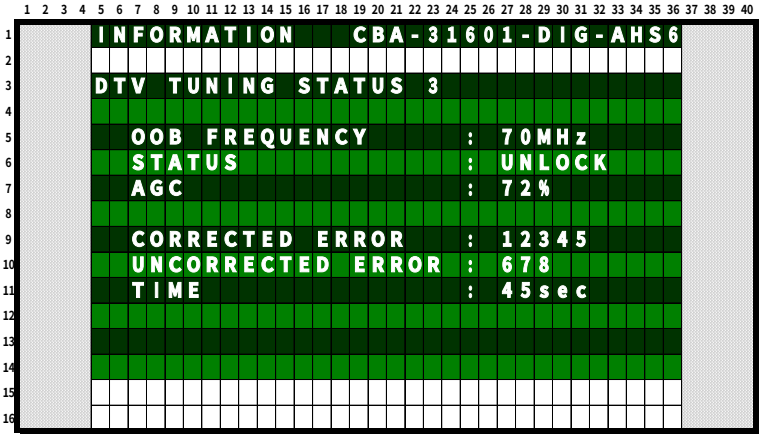
Displays input signal status of MVDEC terminal.

Device	SA	Context
MVDEC	00h	Signal distinct result 1
	01h	Signal distinct result 2
	02h	Flag detection output
	15h	Noise level distinction 1
	16h	Noise level distinction 2
	17h	Non-standard evaluation out
	18h	Sub carrier signal detection
	19h	ACC data output
	1Ah	ACC processed information output
	1Dh	Input signal mode setting

10, 11, 12. DTV TUNING STATUS1, 2, 3







Displays digital broadcast signal information and status upon receiving digital signal.

13. DTV TV-GUIDE BER

Exclusively used for production line. TV-Guide error bit ratio information is displayed.

14. DEBUG INFO

Exclusively used for technical analsyis. Debug information for development use is displayed.

2.2. FUNC.CHECK（Function Check）mode

●Operation item

No.	Display	Content	RS232C
1	FAN⇔	Forces the setting of FAN speed.	FCN
2	AFT⇔	Controls AFT action by turning ON/OFF.	AFT

1. FAN

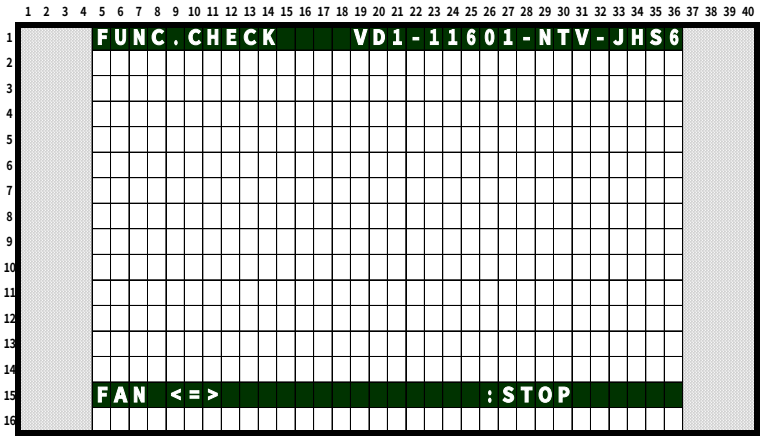


Figure. FAN

Forces the setting of FAN speed (MAX: High speed/MIN: Low speed/STOP: Stops FAN).
NORMAL is for normal operation (i.e. the rotational speed changes according to temperature change).
During Sevice Factory mode, the temperature sensor will operate accordingly to the displayed data.
After exiting the Service Factory mode, the compulsive setting is cancelled, and the FAN wil return to normal operation mode.

Command	Detail
FCN+S00	NORMAL
FCN+S01	MAX
FCN+S02	MIN
FCN+S03	STOP

If rotational speed was compulsorily changed via 232c command, make sure to return the speed to normal operation mode when finished.

2. AFT

Exclusively used for production line.
AFT action is stopped, and assign whether to track down or not during channel tuning.

2.3. COMMON ADJ

Exclusively used for technical analsyis (details omitted).

2.4. PANEL FACT.

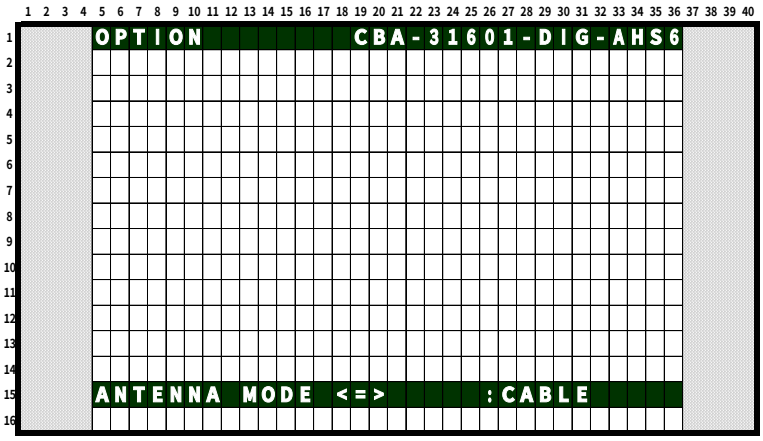
Please refer to panel's service manual.

2.5. OPTION

●Operation item

No.	Function/Display	Content	RS232C
1	PEAK LIMITTER ⇔	Control Peak Limitter (Select ON/OFF)	PLT
2	EDID WRITE MODE ⇔	DISABLE ⇔ ENABLE	EDW
3	ANTENNA MODE ⇔	CABLE⇔ AIR	—

3. ANTENNA MODE



Receiving Cable/Air signal with equipped/unequipped DTB tuner.

①When DTV tuner is equipped

It is effective during tuner function only (others are gray-downed). The currently viewed ANT A/ANT B function's cable/air (both analog and digital) signal are changed. The channel settings are memorized (memorized by DTV side).

②When DTV tuner is unequipped

It is possible for ANT A/ANT B function to receive air/cable signal.

Channel settings are not memorized. But after leaving factory mode, the settings are maintained.

If the air/ cable signal is changed, the reserved allocation map is written.

For example, if the signal is changed to air, then the air's broadcast map is configured, and cable's broadcast map is destroyed.

If the signal is changed to cable, then the cable's broadcast map is configured, and air's broadcast map is destroyed.

OSD display	Funcrion	Control device
CABLE	Change the antenna setting to cable	
AIR	Change the antenna setting to air (analog)	

2.6. INITIALIZE

●Operation item

No.	Display	Content	RS232C
1	SYNC DET (+)	Exclusively used for technical analsyis.	—
2	SG MODE⇔	Paired SG_MODE with SG_PATTERN. Select SG Route.	—
3	SG PATTERN⇔	Paired SG_MODE with SG_PATTERN. Select SG Pattern.	—
4	SIDE MASK LEVEL (+)	Configure the color of the side mask.	BSL GSL RSL
5	FINAL SETUP (+)	Initialize flash memorys on virgin product status	FST
6	SR+⇔	Select SR+ mode or UART SELECT mode.	—
7	UART SELECT⇔	Select boud Rate on RS232C Communication	—
8	CVT AUTO⇔	Exclusively used for technical analsyis.	—
9	HDMI INTR POSITION (+)		

1. SYNC DET

Exclusively used for technical analsyis (details omitted).

2. SG MODE

SG MODE (SG's route selection)/SG PATTERN (signal pattern selection) are used as pair.
In SG MODE, select the SG route and then select the SG pattern to be sent by the selected route.
In SG MODE, make sure to select the route first.

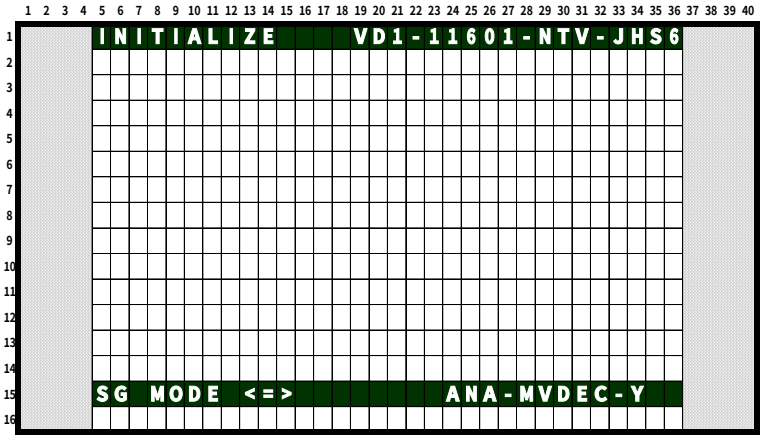


Figure. SG MODE

No.	Display	Content
1	SG OFF	SG Mode is OFF.
2	DIG MVDEC YCBCR	MAIN VDEC: YCbCr (Digital output mode)
3	ANA MVDEC YCBCR	MAIN VDEC: YCbCr (Analog output mode)
4	ANA MVDEC Y	MAIN VDEC: Y (Analog output mode: SG VDEC return setting)
5	ANA AD YCBCR	AD: YCbCr
6	ANA AD RGB	AD: RGB

3. SG PATTERN

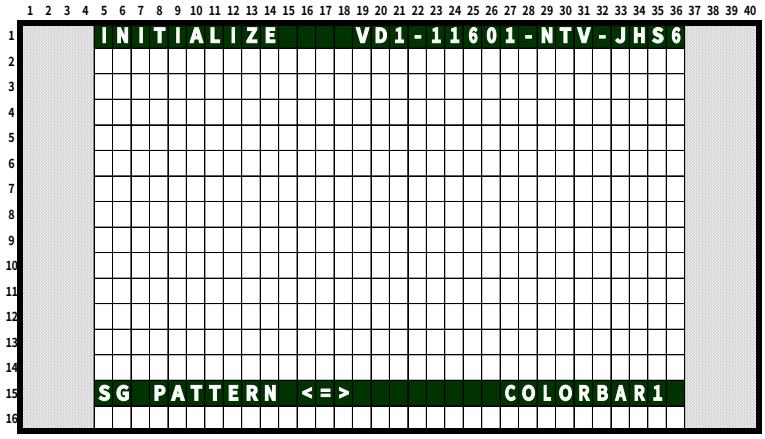


Figure. SG PATTERN

No.	Function/Display	SG Pattern (Brightness IRE Level/Color)
1	COLOR BAR1	Colorbar (75%)
2	COLOR BAR2	Colorbar (100%)
3	RAMP1	Ramp (100% white)
4	RAMP2	Ramp (100% Yellow)
5	RAMP3	Ramp (75% Green)
6	RAMP4	Ramp (75% Red)
7	RAMP5	Ramp (75% Blue)
8	RASTER1	Raster (100% White)
9	RASTER2	Raster (75% Yellow)
10	RASTER3	Raster (75% Cyanide)
11	RASTER4	Raster (75% Green)
12	RASTER5	Raster (75% Magenta)
13	RASTER6	Raster (75% Red)
14	RASTER7	Raster (75% Blue)
15	RASTER8	Raster (-% Black)
16	10STEP1	10STEP (100% white)
17	10STEP2	10STEP (100% Yellow)
18	10STEP3	10STEP (75% Green)
19	10STEP4	10STEP (75% Red)
20	10STEP5	10STEP (75% Blue)

■Notes when using SG MODE/SG PATTERN

- During factory mode, choose the correct route when changing.
- Basically, during VDEC SG output, make sure to connect SG output's Y or G to the AVI input terminal of VDEC.
- During SG MODE, turn off the blanking 50IRE setup function.
- During VDEC SG output, set the YC seperation setting to NTSC.
- It is possible to use ANALOG OUT MODE together during DIGITAL OUT MODE.
  The Main VDEC can output digital color difference, in which colors will appear. But the route to VDEC input cannot be analysed therefore care should be taken when using.
  Depending on the situation, please use the proper analog/digital output.
- The SG MODE outputs color difference and RGB only. Therefore, in the case of CVBS, only the Y input is used resulting in no color. This is not a damage result nor error.
- The SG MODE's ANA AD RGB (route to input 525i to AD by RGB) as a set's route, the setting does not exist. For this account the latter part from MVDEC does not have set values, resulting in having funny colors in colorbar, the brightness changes after switching, etc.
  This is not a damage result nor error.
- Depending on MVDEC's part version, ANA_MVDEC_YCBCR may not display colors.

4. SIDE MASK LEVEL

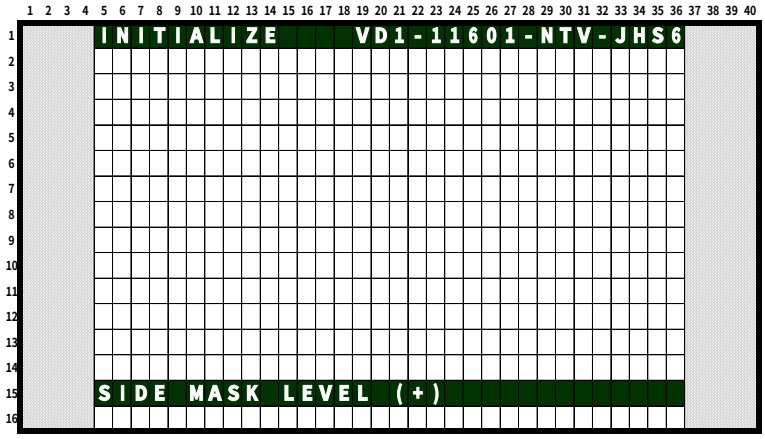


Figure. SIDE MASK LEVEL

To configure sidemask's R, G, B level (To adjust the values, input signal is required).

No	Display	Content	RS232C
1	R MASK LEVEL⇔	Adjust Side Mask R (Adjustable range: 000-255)	RSL
2	G MASK LEVEL⇔	Adjust Side Mask G (Adjustable range: 000-255)	GSL
3	B MASK LEVEL⇔	Adjust Side Mask B (Adjustable range: 000-255)	BSL

5. FINAL SETUP

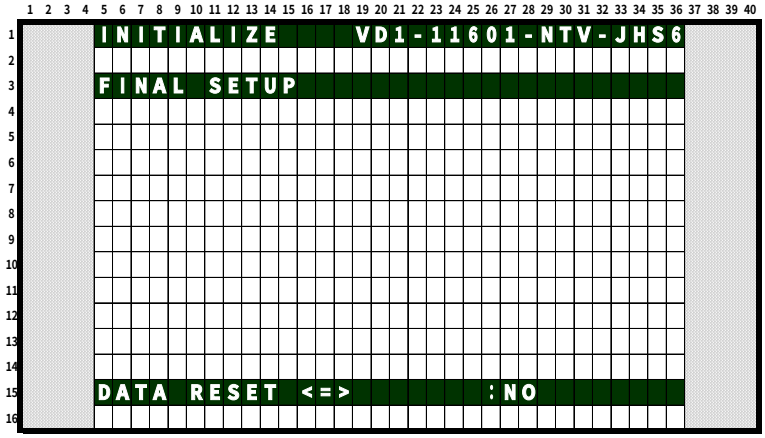


Figure. Final Setup

To reset each memory value sto factory default values. Factory command is "FST".
When the configuration is set to <NO> and the [SET] key is pressed, no action is taken and the menu returns to previous screen.
When the configuration is set to <YES> and the [SET] key is pressed for 5 seconds,
the reset action executes.

6. SR+

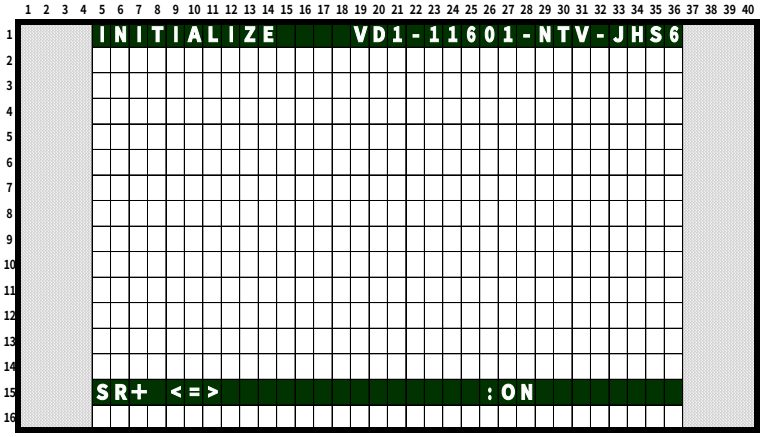


Figure 2.2.0.1. SR+

To use SR+, select ON. To use RS-232c, select OFF.

7. UART SELECT

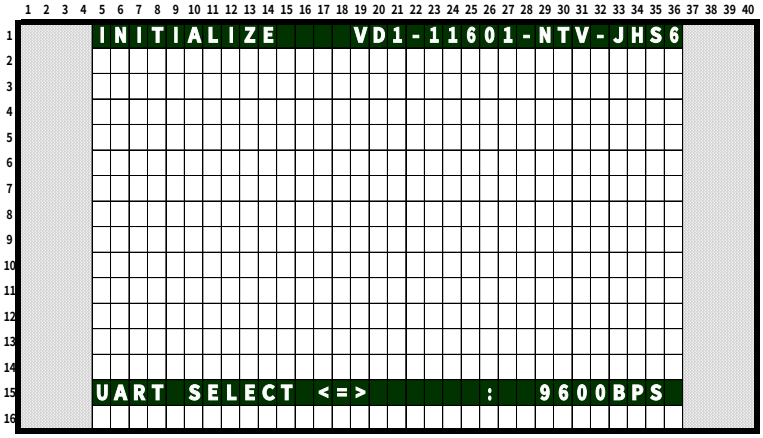


Figure. UART SELECT

When SR+ is OFF, UART SELECT can be selected.
When SR+ is ON, UART SELECT cannot be selected.

Option No.	Display	Operation/Contorl	Remarks
1 (initial setting)	----	To Set to SR+ (9600bps)	SR+ is ON
2	1200	To Set to RS-232c (1200bps)	SR+ is OFF
3	2400	To Set to RS-232c (2400bps)	
4	4800	To Set to RS-232c (4800bps)	
5	9600	To Set to RS-232c (9600bps)	
6	19200	To Set to RS-232c (19200bps)	
7	38400	To Set to RS-232c (38400bps)	

DISASSEMBLY

Note : Even if the unit shown in the photos and illustrations in this manual may differ from your product, the procedures described here are common.

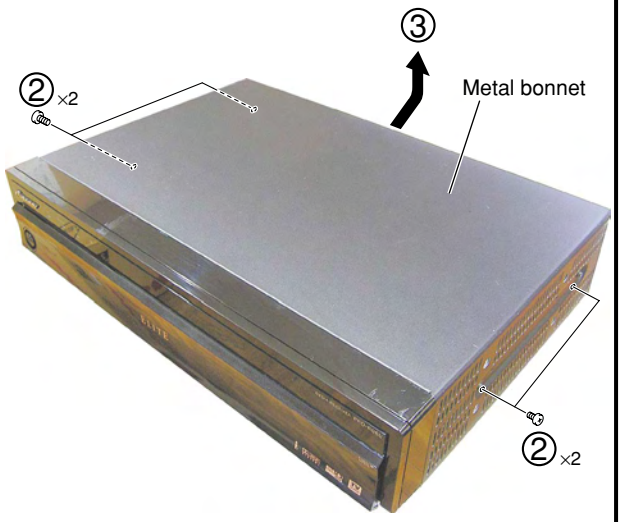
1 Metal Bonnet

① Remove the three screws.

● **Rear view**

② Remove the four screws.

③ Remove the metal bonnet while pulling it backward.



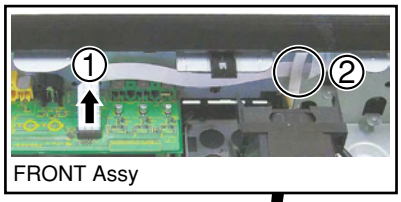
2 Front Panel Section

① Disconnect the flexible cable.

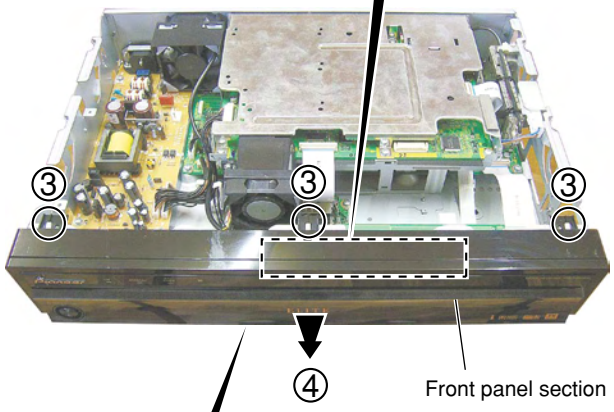
② Remove the flexible cable from the flat clamp.

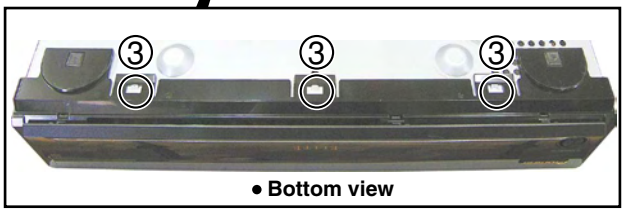
③ Unhook the six hooks.

④ Remove the front panel section.



FRONT Assy



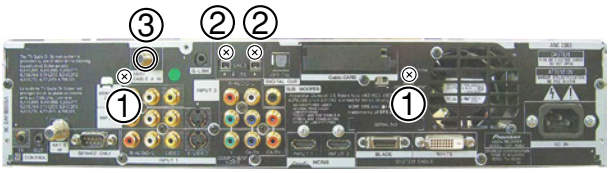


● **Bottom view**

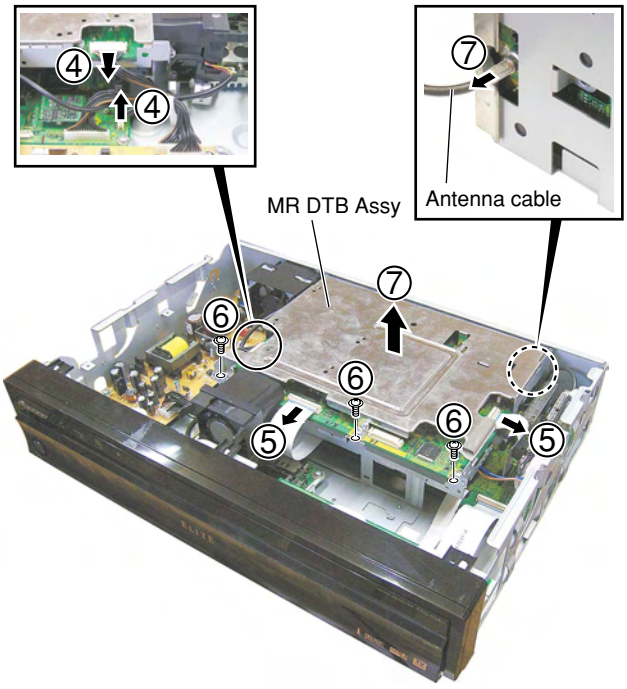
3 MR DTB Assy

Note : MR DTB Assy can remove even if does not remove the front panel section.

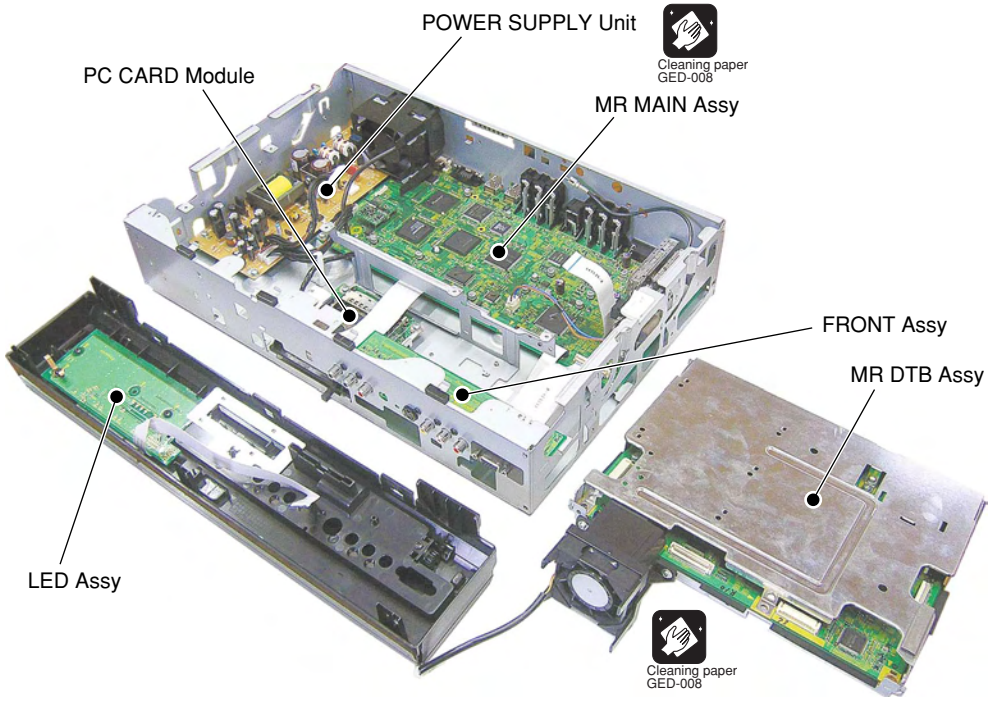
① Remove the two screws.
② Remove the two screws.
③ Remove the one nut.
④ Disconnect the two connectors.
⑤ Disconnect the two flexible cables.
⑥ Remove the three screws.
⑦ Remove the antenna cable.
⑧ Remove the MR DTB Assy.



● **Rear view**

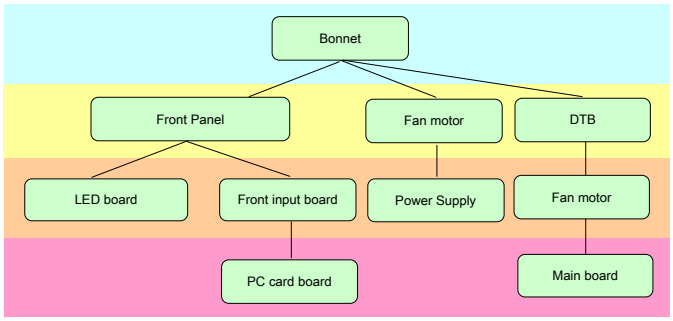


PCB Location



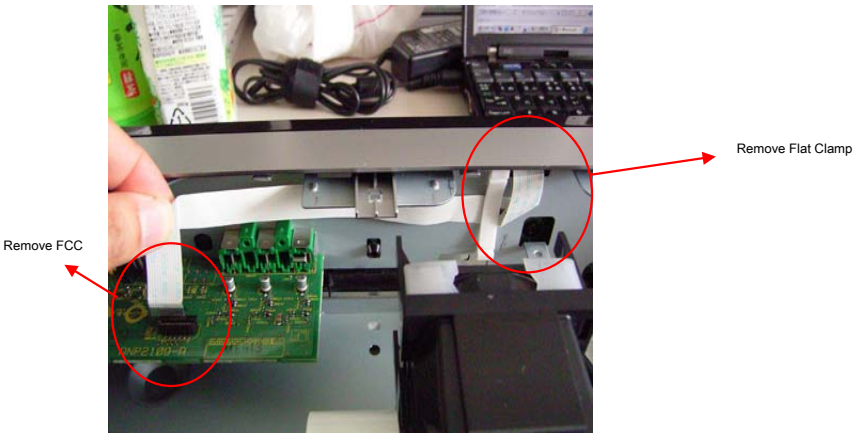
6G MR (Tips for removing the Main PCB)

Use the chart below to remove each PCB.



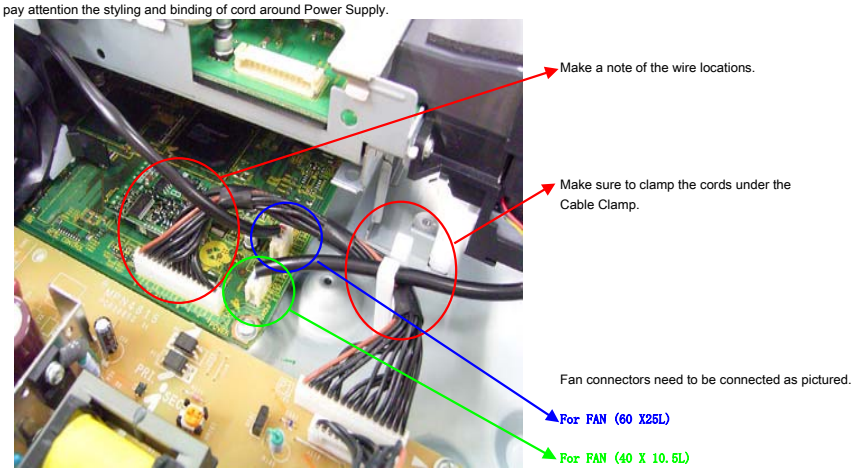
Note:

Remove the 2 parts, shown by red circles, before removing Front Panel Assy.
(The reason is that FCC will be pulled when removing Front Panel Assy.)

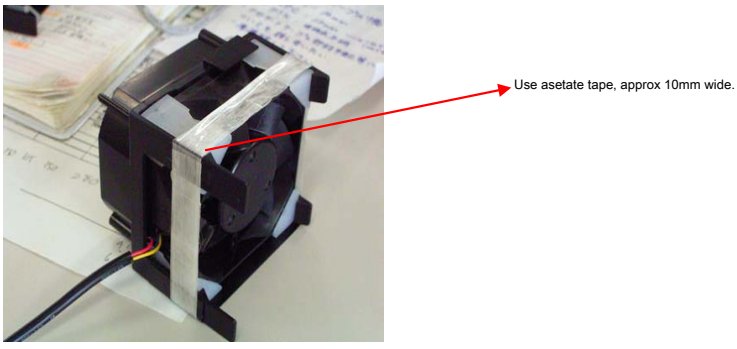


In case of placing Power Supply, Digital Tuner and AV PCB, make sure to attach the screw on the Connector Panel side first.
(The reason is to prevent the stress to PCB and solder.)

Please pay attention the styling and binding of cord around Power Supply.

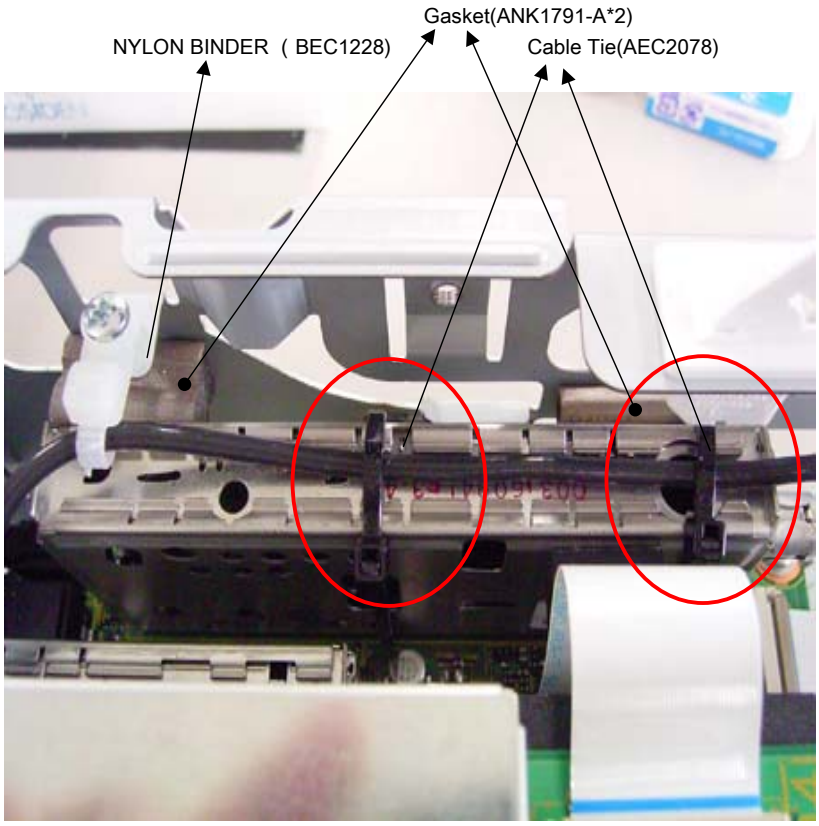

Make a note of the wire locations.
Make sure to clamp the cords under the Cable Clamp.
Fan connectors need to be connected as pictured.
For FAN (60 X25L)
For FAN (40 X 10.5L)

After replacing the parts, stabilize the FAN (60X25L) with tape as shown before removing in order to prevent a loose FAN while shipping.



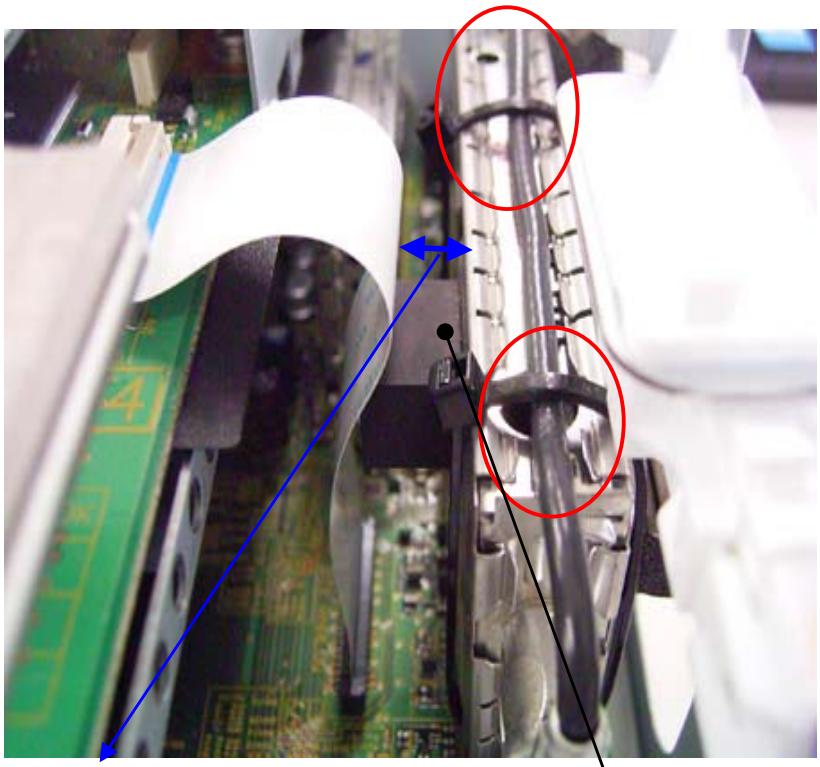
Note: Please pay attention for not breaking screw. The screw for HDMI and I-Link are weak and tend to be broken.

Attention for US model



Do not forget to install the Gasket after removing.

Refer to red circles below.
Put the shield cord along the top of Front End
and bind with cable ties like the photo.
(For securing the spec of beat noise of display)



Refer to blue arrow
Secure the interspaces between Front-end
and flexible cable like showing photo.

Do not forget to place Rubber Cushion
(AEB1433) after treatment.

● **Image for the composite or S or TV signal is not displayed**

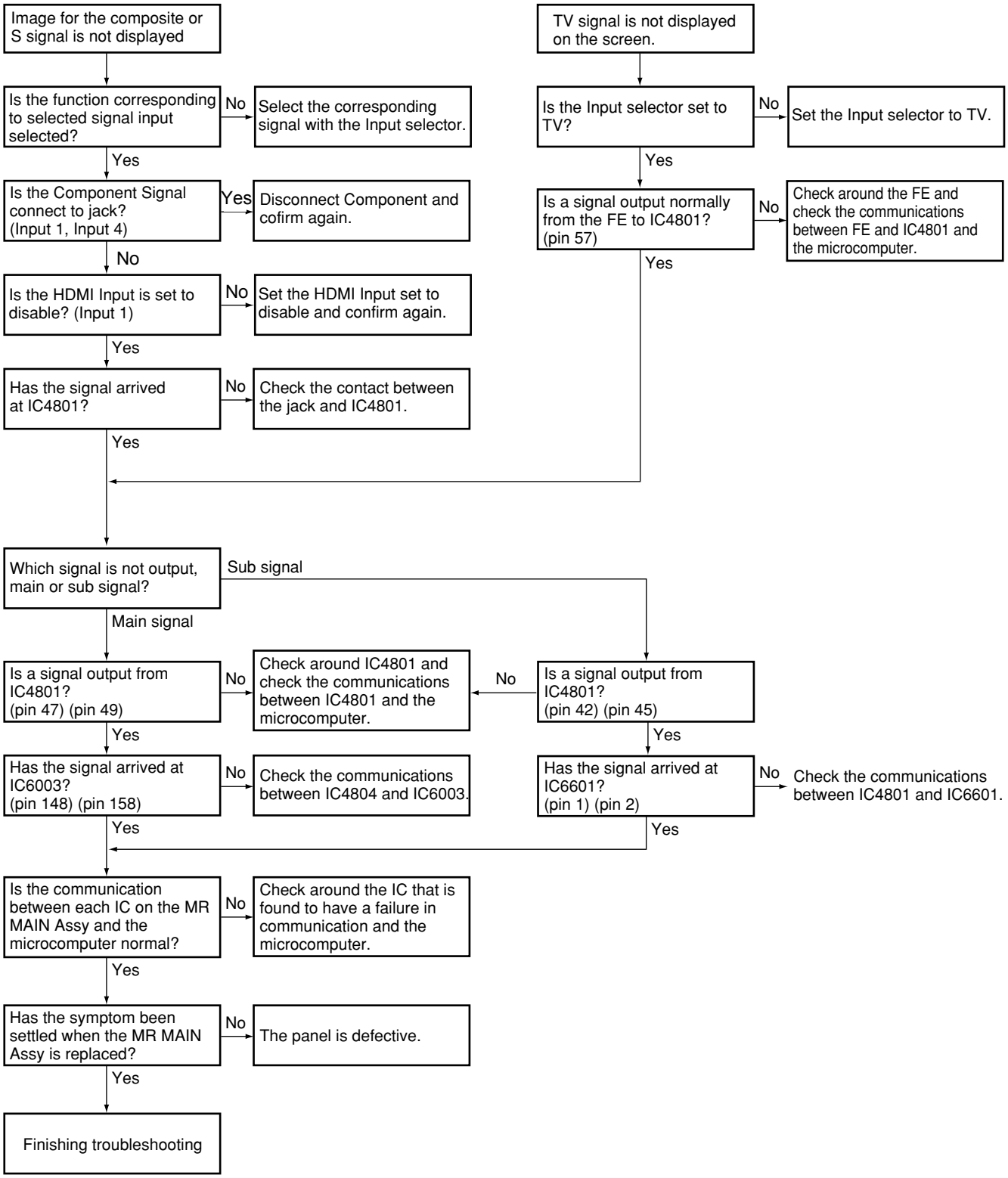


Image for the composite or S signal is not displayed
Is the function corresponding to selected signal input selected?
No
Select the corresponding signal with the Input selector.
Yes
Is the Component Signal connect to jack? (Input 1, Input 4)
Yes
Disconnect Component and cofirm again.
No
Is the HDMI Input is set to disable? (Input 1)
No
Set the HDMI Input set to disable and confirm again.
Yes
Has the signal arrived at IC4801?
No
Check the contact between the jack and IC4801.
Yes
TV signal is not displayed on the screen.
Is the Input selector set to TV?
No
Set the Input selector to TV.
Yes
Is a signal output normally from the FE to IC4801? (pin 57)
No
Check around the FE and check the communications between FE and IC4801 and the microcomputer.
Yes
Which signal is not output, main or sub signal?
Sub signal
Main signal
Is a signal output from IC4801? (pin 47) (pin 49)
No
Check around IC4801 and check the communications between IC4801 and the microcomputer.
No
Is a signal output from IC4801? (pin 42) (pin 45)
Yes
Has the signal arrived at IC6003? (pin 148) (pin 158)
No
Check the communications between IC4804 and IC6003.
Yes
Has the signal arrived at IC6601? (pin 1) (pin 2)
No
Check the communications between IC4801 and IC6601.
Yes
Is the communication between each IC on the MR MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have a failure in communication and the microcomputer.
Yes
Has the symptom been settled when the MR MAIN Assy is replaced?
No
The panel is defective.
Yes
Finishing troubleshooting

● Image for the component or RGB or PC signal is not displayed

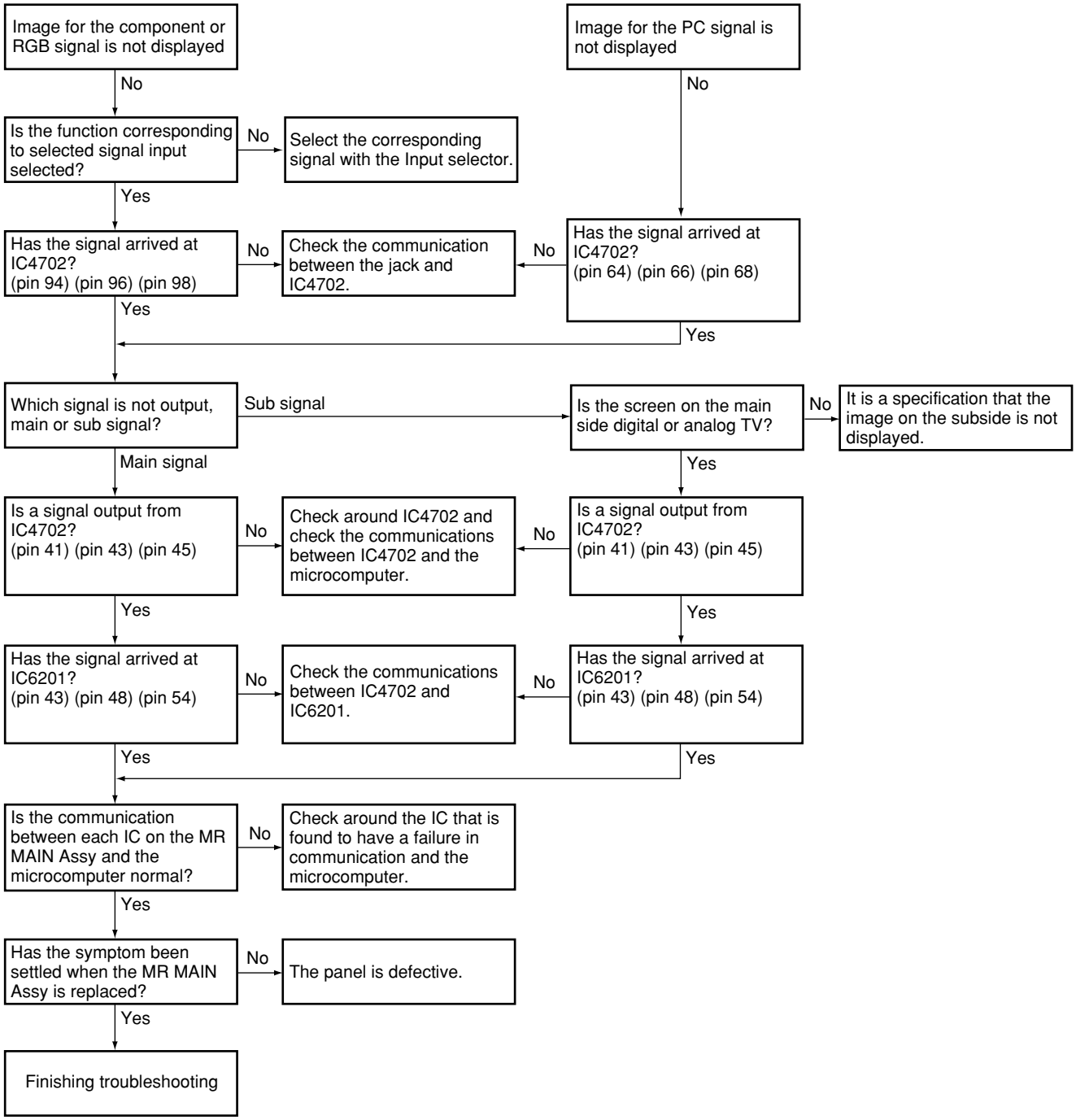
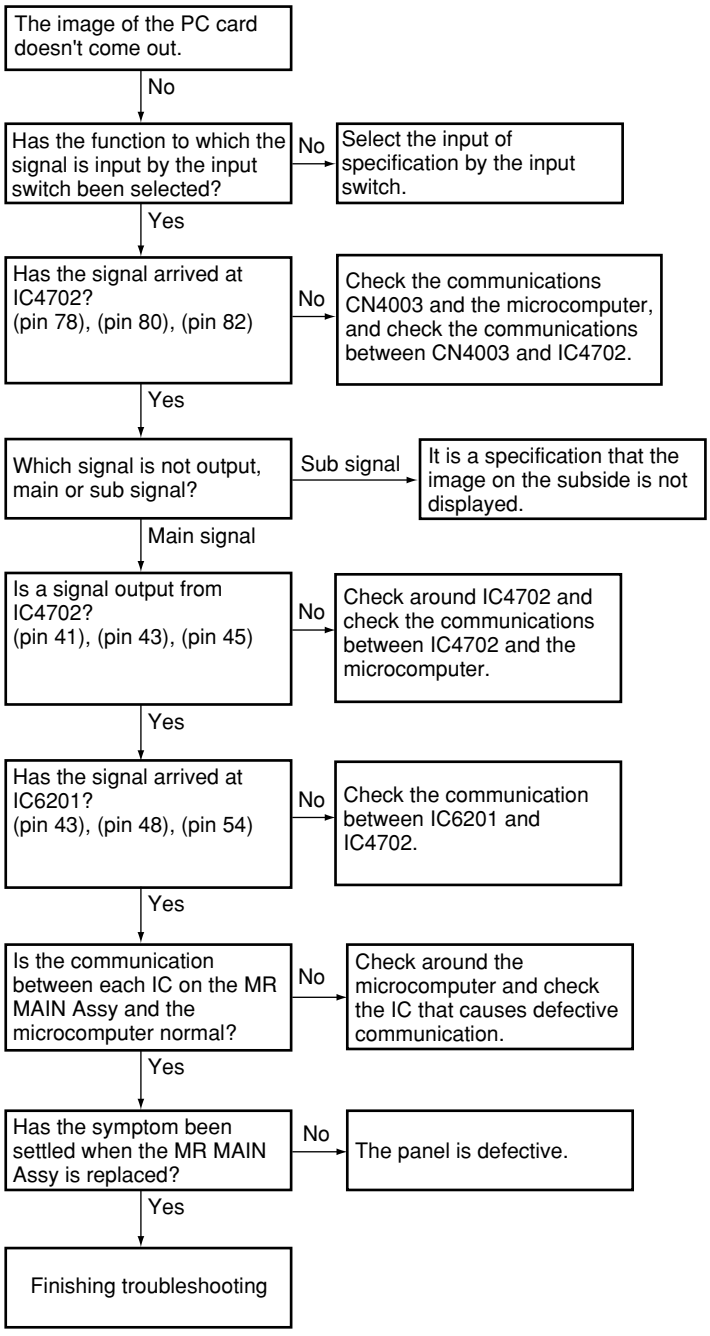
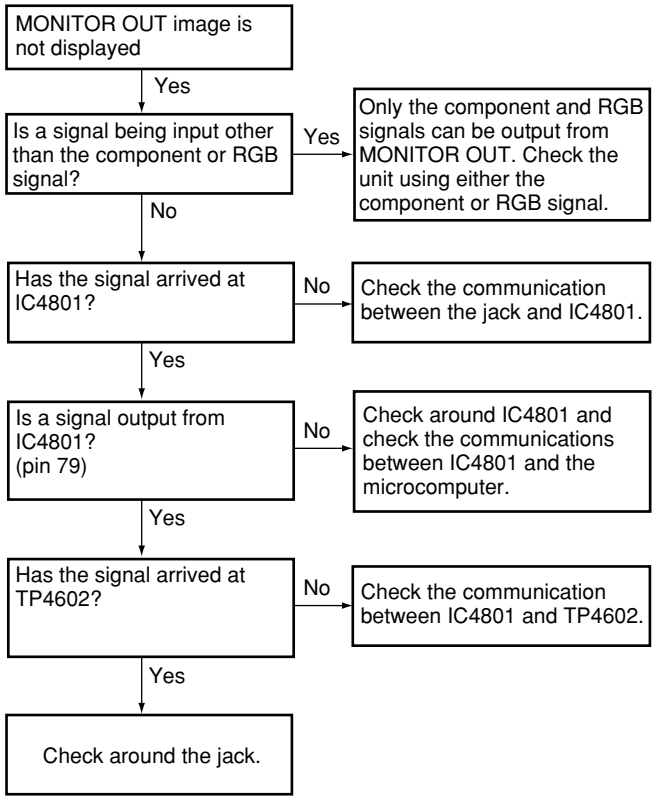


Image for the component or RGB signal is not displayed
No
Is the function corresponding to selected signal input selected?
No
Select the corresponding signal with the Input selector.
Yes
Has the signal arrived at IC4702? (pin 94) (pin 96) (pin 98)
No
Check the communication between the jack and IC4702.
Yes
Image for the PC signal is not displayed
No
Has the signal arrived at IC4702? (pin 64) (pin 66) (pin 68)
No
Yes
Which signal is not output, main or sub signal?
Sub signal
Is the screen on the main side digital or analog TV?
No
It is a specification that the image on the subside is not displayed.
Yes
Main signal
Is a signal output from IC4702? (pin 41) (pin 43) (pin 45)
No
Check around IC4702 and check the communications between IC4702 and the microcomputer.
Yes
Is a signal output from IC4702? (pin 41) (pin 43) (pin 45)
No
Yes
Has the signal arrived at IC6201? (pin 43) (pin 48) (pin 54)
No
Check the communications between IC4702 and IC6201.
Yes
Has the signal arrived at IC6201? (pin 43) (pin 48) (pin 54)
No
Yes
Is the communication between each IC on the MR MAIN Assy and the microcomputer normal?
No
Check around the IC that is found to have a failure in communication and the microcomputer.
Yes
Has the symptom been settled when the MR MAIN Assy is replaced?
No
The panel is defective.
Yes
Finishing troubleshooting

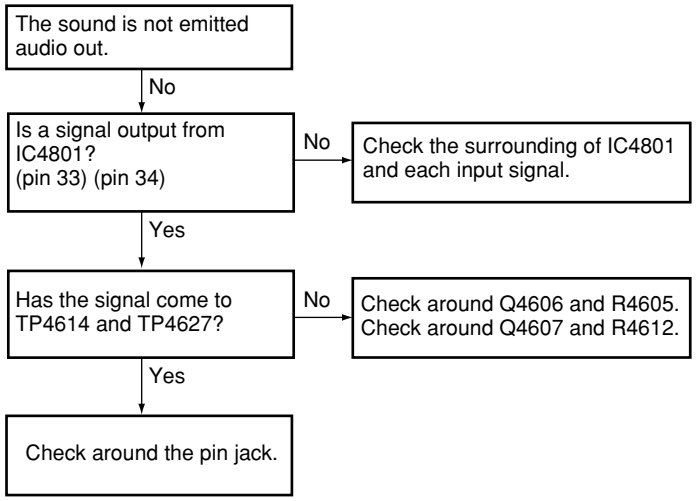
● The image of the PC card doesn't come out


The image of the PC card doesn't come out.
No
Has the function to which the signal is input by the input switch been selected?
No
Select the input of specification by the input switch.
Yes
Has the signal arrived at IC4702? (pin 78), (pin 80), (pin 82)
No
Check the communications CN4003 and the microcomputer, and check the communications between CN4003 and IC4702.
Yes
Which signal is not output, main or sub signal?
Sub signal
It is a specification that the image on the subside is not displayed.
Main signal
Is a signal output from IC4702? (pin 41), (pin 43), (pin 45)
No
Check around IC4702 and check the communications between IC4702 and the microcomputer.
Yes
Has the signal arrived at IC6201? (pin 43), (pin 48), (pin 54)
No
Check the communication between IC6201 and IC4702.
Yes
Is the communication between each IC on the MR MAIN Assy and the microcomputer normal?
No
Check around the microcomputer and check the IC that causes defective communication.
Yes
Has the symptom been settled when the MR MAIN Assy is replaced?
No
The panel is defective.
Yes
Finishing troubleshooting

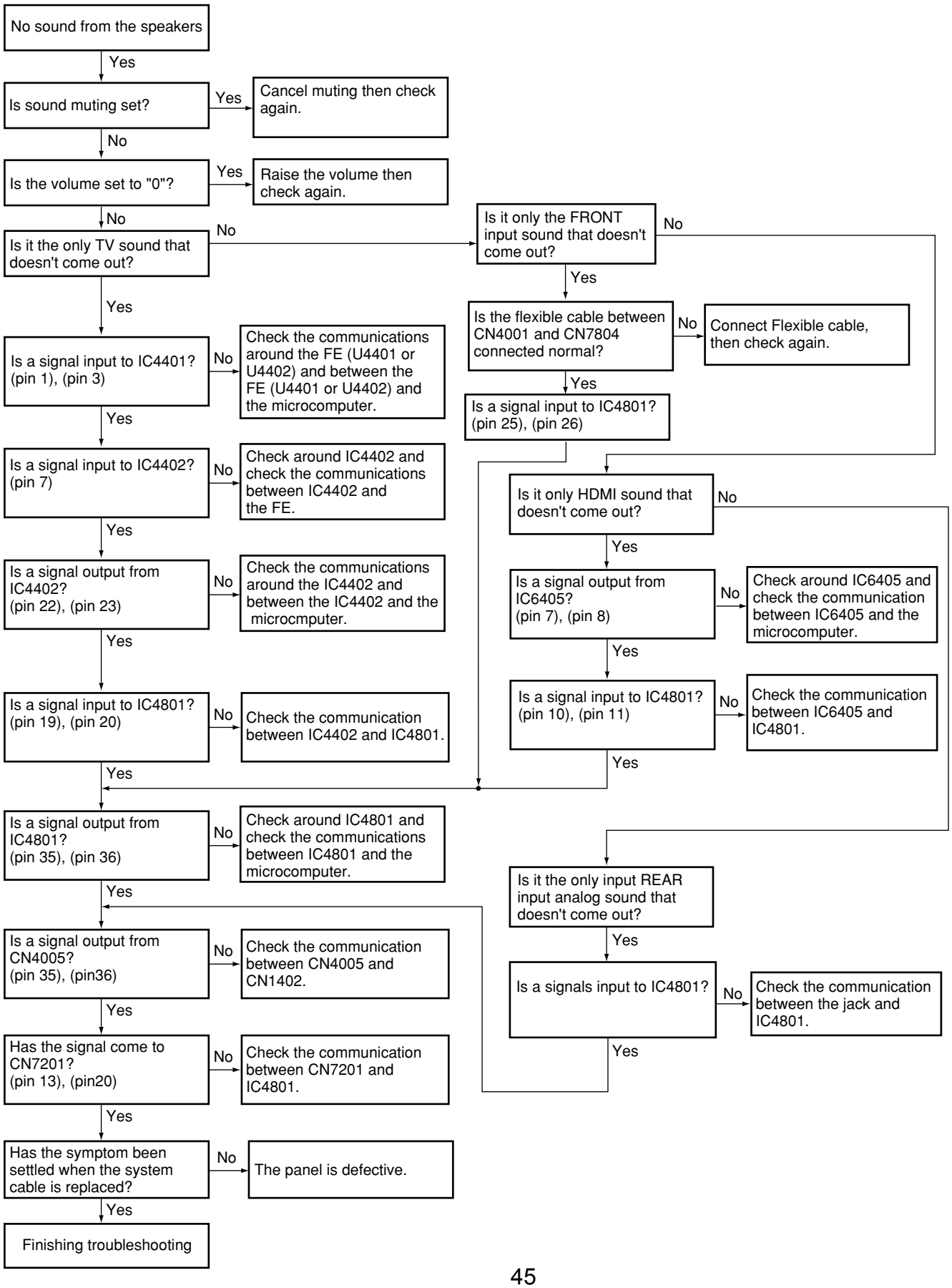
● MONITOR OUT image is not displayed


MONITOR OUT image is not displayed
Yes
Is a signal being input other than the component or RGB signal?
Yes
Only the component and RGB signals can be output from MONITOR OUT. Check the unit using either the component or RGB signal.
No
Has the signal arrived at IC4801?
No
Check the communication between the jack and IC4801.
Yes
Is a signal output from IC4801? (pin 79)
No
Check around IC4801 and check the communications between IC4801 and the microcomputer.
Yes
Has the signal arrived at TP4602?
No
Check the communication between IC4801 and TP4602.
Yes
Check around the jack.

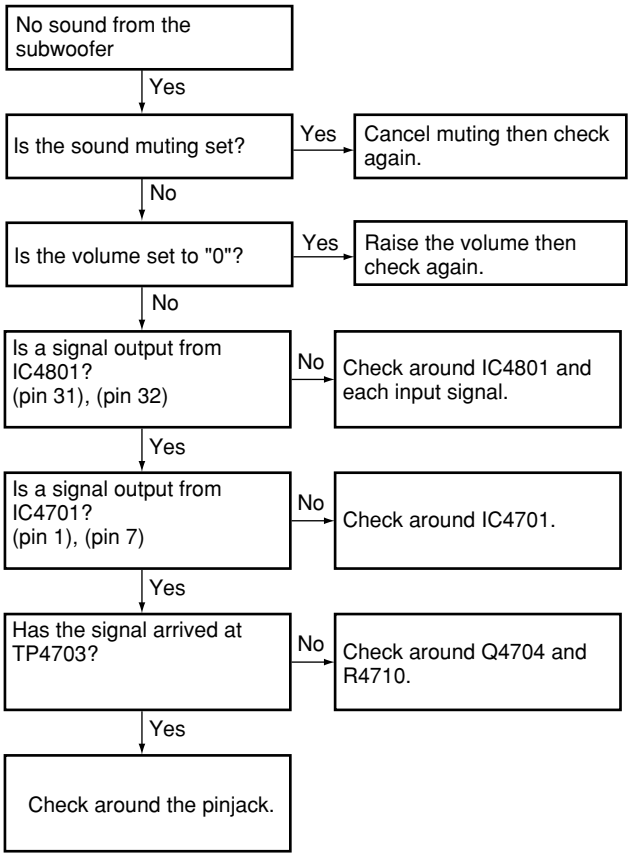
● The sound is not emitted audio out


The sound is not emitted audio out.
No
Is a signal output from IC4801? (pin 33) (pin 34)
No
Check the surrounding of IC4801 and each input signal.
Yes
Has the signal come to TP4614 and TP4627?
No
Check around Q4606 and R4605. Check around Q4607 and R4612.
Yes
Check around the pin jack.

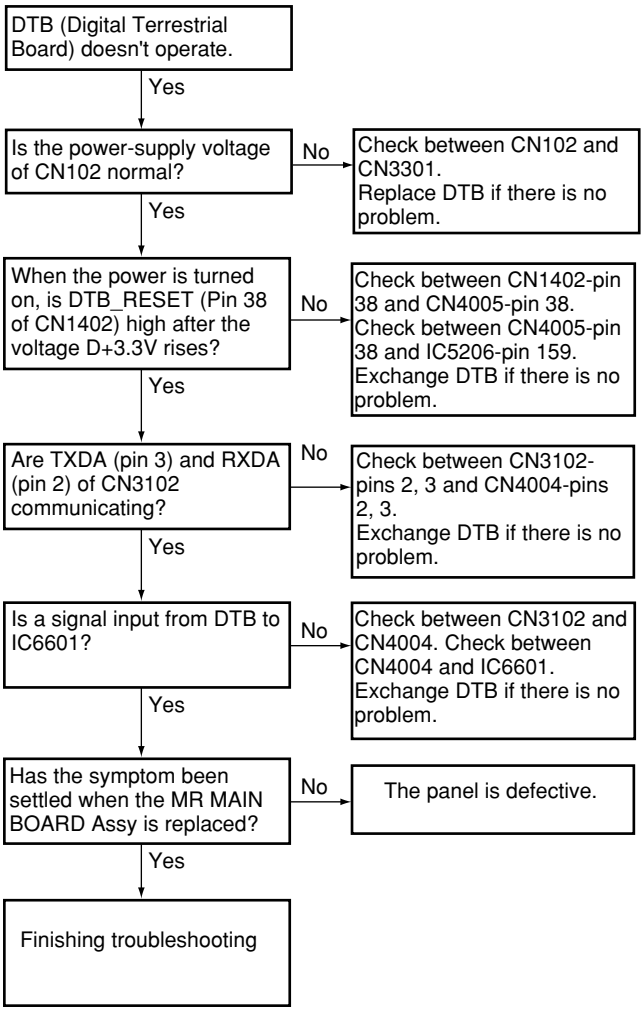
● No sound from the speakers


No sound from the speakers
Yes
Is sound muting set?
Yes
Cancel muting then check again.
No
Is the volume set to "0"?
Yes
Raise the volume then check again.
No
Is it the only TV sound that doesn't come out?
No
Is it only the FRONT input sound that doesn't come out?
No
Yes
Is the flexible cable between CN4001 and CN7804 connected normal?
No
Connect Flexible cable, then check again.
Yes
Is a signal input to IC4801? (pin 25), (pin 26)
Yes
Is a signal input to IC4401? (pin 1), (pin 3)
No
Check the communications around the FE (U4401 or U4402) and between the FE (U4401 or U4402) and the microcomputer.
Yes
Is a signal input to IC4402? (pin 7)
No
Check around IC4402 and check the communications between IC4402 and the FE.
Yes
Is a signal output from IC4402? (pin 22), (pin 23)
No
Check the communications around the IC4402 and between the IC4402 and the microcmputer.
Yes
Is a signal input to IC4801? (pin 19), (pin 20)
No
Check the communication between IC4402 and IC4801.
Yes
Is it only HDMI sound that doesn't come out?
No
Yes
Is a signal output from IC6405? (pin 7), (pin 8)
No
Check around IC6405 and check the communication between IC6405 and the microcomputer.
Yes
Is a signal input to IC4801? (pin 10), (pin 11)
No
Check the communication between IC6405 and IC4801.
Yes
Is a signal output from IC4801? (pin 35), (pin 36)
No
Check around IC4801 and check the communications between IC4801 and the microcomputer.
Yes
Is it the only input REAR input analog sound that doesn't come out?
Yes
Is a signal output from CN4005? (pin 35), (pin36)
No
Check the communication between CN4005 and CN1402.
Yes
Is a signals input to IC4801?
No
Check the communication between the jack and IC4801.
Yes
Has the signal come to CN7201? (pin 13), (pin20)
No
Check the communication between CN7201 and IC4801.
Yes
Has the symptom been settled when the system cable is replaced?
No
The panel is defective.
Yes
Finishing troubleshooting

● No sound from the subwoofer



● DTB (Digital Terrestrial Board) doesn't operate


DTB (Digital Terrestrial Board) doesn't operate.
Yes
Is the power-supply voltage of CN102 normal?
No
Check between CN102 and CN3301. Replace DTB if there is no problem.
Yes
When the power is turned on, is DTB_RESET (Pin 38 of CN1402) high after the voltage D+3.3V rises?
No
Check between CN1402-pin 38 and CN4005-pin 38. Check between CN4005-pin 38 and IC5206-pin 159. Exchange DTB if there is no problem.
Yes
Are TXDA (pin 3) and RXDA (pin 2) of CN3102 communicating?
No
Check between CN3102-pins 2, 3 and CN4004-pins 2, 3. Exchange DTB if there is no problem.
Yes
Is a signal input from DTB to IC6601?
No
Check between CN3102 and CN4004. Check between CN4004 and IC6601. Exchange DTB if there is no problem.
Yes
Has the symptom been settled when the MR MAIN BOARD Assy is replaced?
No
The panel is defective.
Yes
Finishing troubleshooting